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Two field inspections will as usual be made, the first as near as possible to the blossoming period, and the second some three to four weeks later.

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Control of Caterpillars

Tent caterpillars do an immense amount of damage to many species of trees in the Prairie Provinces. The cottonwood, willow and ash are the most seriously injured. By stripping off the foliage, as they frequently do, the trees are not only made unsightly, but weakened against attacks of other insects as well as diseases. If the stripping occurs year after year the trees are liable to be killed. The Dominion Entomological Branch has issued a circular which describes the means that may be taken to control this insect. Among the measures to be taken are the cutting off of egg masses from the twigs of the trees. This is easily done with long-handled pruning shears during the spring before the leaves are open. After the buds are open, trees that are infested ought to be sprayed with arsenate of lead solution. The formula for mixing appears in Circular No. 19 of the Department of Agriculture. When the caterpillars have devoured the foliage of the trees on which they were hatched, they migrate in swarms in search of other food. At this stage they may be destroyed by spraying with kerosene emulsion, the formula for which is also described in the circular, which may be obtained from the Publications Branch of the Department of Agriculture at Ottawa. To protect trees against infestation by migrating caterpillars, the trunk should be wrapped about with a sticky band four inches wide. These bands give better results if kept fresh and closely guarded against clogging and drying. Views of the eggs, caterpillars, cocoons and the mature moth, as well as spraying machines are illustrated in the pamphlet.

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The Western Gardener and Beekeeper

Official Organ of the Manitoba Horticultural and Forestry Association

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JUNE, 1924

No. 8

Landscape Gardening Applied to a City Lot

Reported Address of PROF. CLARENCE CARY of St. Paul, Minnesota, to the Manitoba Horticultural and Forestry Association.

To make attractive plantings about a home the knowledge of the horticulturist and the sensibility of the artist are both required. While some shrubs are pretty as viewed by themselves without any relation to the surroundings, it is much better to have them arranged so that they and their surroundings as a whole make an attractive picture. Shrubs or woody plants are particularly suitable for adorning the grounds about a house, although flowers have their place, too. In landscape gardening the first consideration after the placing of the house on its lot and providing for the entrance ways connecting it with the street is the planting of trees and shrubs in positions where they will provide what shade is required, and where they will add to the general appearance of the place.

Landscape gardening is defined as the art and practice of arranging land and landscape for human use and enjoyment. Three special features which must be attended to are rhythm, balance and harmony. The idea of rhythm is exemplified in the uniform spacing of trees along a boulevard. On Broadway in Winnipeg there are two rows of trees which even in the winter time present a pleasing aspect. These big trees, mostly elms, are all in straight lines with equal distances between them. In some cases the same rhythmic effect is presented by having two trees with a short interval followed by another tree at a longer interval, and then by another at a short interval, and so on, alternately. Balance may be either obvious, as when one shrub on one side of the picture is set off against a similar shrub on the other side, or otherwise, as when one big thing on one side is set off against a group of smaller things on the other side. For harmony there must be something common to all parts. If all the shrubs on a lawn are of the same variety there will be harmony. Where there are shrubs of different varieties, however, there may also be harmony if the transition from one kind to another is not too abrupt.

How these main principles of landscape gardening were worked out in the case of a city lot of ordinary dimensions formed the bulk of Professor Cary's address. He drew rough diagrams on big sheets of paper for illustrations as he spoke.

As the ground floor of a house was divided into a living room or reception room, a dining room and a kitchen, the outdoor part of the home should be divided correspondingly. Between the front door (which led usually by way of a hall into the living room) and the street there was the front yard or the "public area." This part should be planned for the view of the public, while any little garden or shady spot, which was intended for private use only, should be off to one corner, in what might be called the "private area." This would naturally be placed on the side of the lot, opposite to the drive-way or back walk, where the traffic passed between the back door and the street. This private area was often found without any definite fence or hedge screening it from the rest of the lot, but, nevertheless, enjoying a distinctness from the public and service areas. If there was a garage it would be in the service area, also the coal chute, the clothes lines and the ash bin would be there.

In the front yard there was usually a walk leading to the front door. This should be straight unless there was some reason for it to be otherwise, as for instance, a tree standing in the way. Everything in the yard should be planned for simplicity and for making a good first impression. To plan the grounds well one should pay most attention to the outline and shape of the trees to be used, forgetting to some extent the other characteristics.

Besides having some trees or shrubs around the edge of the lawn and perhaps a couple or so in the middle of the lawn, one may have some plantings at the foundation of the house with good effect. These are placed so as to relieve the abruptness of the transition from stone wall to grass. The effect of shrubbery around the founda-

tion will be better if spaces are left, so that the base of the wall can be seen at intervals. It is a mistake moreover to have shrubbery nowhere else but close up to the house. There is a better effect when there is some shrubbery out in the lawn as well. If a couple of big trees, one on each side of the lawn, are meant to be the chief feature, the other things planted on the grounds should be of quiet colors and not too conspicuous.

Trees and shrubs may be planted for ornamentation, and sometimes they may be planted in some places where they are wanted to screen some objectionable things in the service area. The sight of a garage on one side of a house, while shrubs and other natural looking things are seen on the other side, may spoil the landscape. Having an arch over the driveway or some big shrubs partially hiding the garage is sometimes desirable.

Trees are sometimes wanted in definite locations to form a background for the house. Some bright thing may be wanted here and there to relieve the monotony of the landscape. Borders may be laid out formally or informally. A formal outline is one of a definite geometrical shape, while an informal one is more like what is found in natural growths. Even for formal curves and angles some reason should be apparent. For example, the edge of a flower bed may curve to go around a tree. If there is not naturally a reason, one can be supplied by planting.

In shrubs three sizes are generally recognized, namely the background shrubs or tall ones, the filler shrubs of medium height and the foreground shrubs. When the three kinds are placed together they give the appearance of steps coming down gradually to the ground level. It is hard to use the background and foreground sizes well together. These ideas again relate to form and size, not to varieties. In landscape gardening varieties are a secondary consideration, depending on how they fit into the desired arrangement in any particular case.

Plums, Plum and Cherry Hybrids and Cherries

W. J. BOUGHEN, Manitoba Horticultural and Forestry Association

Our worthy secretary of the Manitoba Horticultural and Forestry Association appointed me to write a paper on the above topic. His request required details as to origin, quality of fruits, season and habits of growth of tree.

I suggested it was about time I was superannuated as a feature of the fruit session as I had contributed a paper so many years that I could not keep track of them. But our secretary would not take heed of this, so here I am willing to give what little I know, but wishing I knew what I expect to know in three or four years time; for in 1922 and 1923 I have planted about 20 new varieties in each year and, having ordered trees of all remaining varieties that I think stand a chance in our district, I surely must be getting fixed for finding out a lot about plums inside the next four or five years. Anyway what I know now may be sufficient for this paper, and what I will find out from my new planting will be of interest in a few years time.

Nigra or Native Plums

Let us first consider the Nigra or Native Canada Plum. Its northern habit extends to Swan River and west past Grandview in the north and into south Saskatchewan. In all districts where found wild it is of annual interest to the residents. In many districts near us I find the people go plum-crazy once a year and go with auto and buggy and on horseback to the known plum patches and pick the fruit, barely ripe mostly, and a lot of it too green even to tell what it might be like if it was ripe. Almost every old-timer admits he knows where there are some wild trees with fruit as good as tame fruit. A good many report a blue plum. This has never been found, except the first time by the old timer. And why blue should seem such a desirable color in a plum and not in a man I am unable to explain. The bluest Nigra, or Americana, I have yet seen is a seedling I grew which is purplish red, of good size and sweet. It frequently when ripe has its admirers and I have tagged it "Darkie." However I have diverged somewhat from describing the Nigra Plum. Its chief distinction from the Americana at blossoming time is that besides being earlier and whiter and larger flowered it turns pinkish when the blooms are dying and it is quite reddish in the calyx. I hunted wild plums in many districts in 1920 when I was horticultural explorer working for Prof. Macoun, and I have come to the conclusion that the Dauphin district around the Riding Mountains is as good a place as can be found for good varieties of the Nigra Plum. I have shown wild plums at Winnipeg Horticultural Show for the last four years and have always had the first prize plum. In 1920-21 I showed "Stevens." It is a wild plum discovered by a man of that name, and it is very early, clear pale yellow with sometimes a pink cheek. It is rather firm and free from astringency. In 1922 down on the

Wilson River there was a tree loaded with large green plums, very large dark down leaves and dark brown downy twigs. Wild plums that year were badly affected by plum pocket, but this had a full crop. I felt that I was in the presence of a superior wild plum and decided to take home a hundred buds and put them into seedling plum trees, and when the fruit ripened I felt the joy of discovery, for it was a very heavy red fruit of good quality. It had no real competitors at either Dauphin or Winnipeg Horticultural Exhibitions, spectators often remarking it was no wild plum. I should have said that Stevens in tree is inclined to be low and weeping, and the Wilson River tree broad and spreading. Neither is the Valley River plum tree of large growth, but 1923 was the first year its fruit was late enough to exhibit in early September. It is yellow with dark red cheek, keeping the suture quite green till dead ripe, when if cut in two the stone proves quite free, the skin peels off easily and the yellow firm flesh is in one's hand quite different from ordinary Nigra plums. It is very sweet and cooks free from astringency and is inclined to jelly. I consider this has more points desirable to the plant breeder than any other of this class. I am propagating these three plums, but want them to go north and west into naturally plumless regions, for I consider them harder than any plum trees offered by the trade.

Now we come to the plums of this family of more southern origin, Mammoth, Assiniboin, Winnipeg, Cheney and Aitken. Mammoth is a tree of spreading habit, and it originated and was introduced by A. P. Stevenson of Morden, Man., and although it originated 150 miles south of my place I have never seen the slightest indication of winter injury. It is very prolific, of good sized red plums, heavily covered with bloom. It is a good preserver and is good to eat out of hand when fully ripe. Assiniboin and Winnipeg both originated from wild plum seed sent to Prof. Hansen of Brookings, South Dakota, by Thos. Frankland, Municipal Clerk of Stonewall, Man. The trees grow upright more than the others and are prolific annual bearers of large red plums, rather long in shape. I have had Assiniboin $5\frac{1}{4}$ inches in circumference. Eight plums measuring nearly thirteen inches in length. It preserves with a desirable tartness, which makes the consumer call for more.

The Cheney is ten days later and is another upright grower, very vigorous in tree. It is the most beautiful bloomer of any plum on the place, very white and floriferous going off bloom in a fine pale pink. The fruit is large, red and firmer than most. It is an elegant preserver and the fruit sells with a rush. It originated in Wisconsin near La Crosse. The Aitken was introduced by the Jewell Nursery of Minnesota. It grows upright, but not so strongly as the Cheney. It is early to bloom, which it does with our

earliest natives. Its fruit is mottled when green and turns a glaring red with a wedge shape. It is soft and early and hardy. I have heard it praised but I hardly think it very worthy. All the Nigra family are with varying degrees liable to be affected by plum pocket, which swells up the young fruit into hollow pockets. The remedy is to spray the trees with Bordeaux mixture before the blossoms open. Going over the trees twice a few days apart seems to me to be an ideal plan to prevent this fungus disease from destroying the fruit. I shall pass lightly over the American group this time as many of the commercial varieties originated rather far south to ripen where I am situated every year, but I have a large number of trees of this type grown from seed. The flowers in spring are smaller and greenish white, they are later starting, as is always characteristic of a tree of southern origin. They are not subject to plum pocket to any degree worthy of mention and they are very prolific in fruits of many sizes, qualities and flavors and also vary greatly in season of ripening. They have paid better returns than any similar piece of land on the farm till 1923, when a frost of 17 degrees on September 13th, after a later than usual spring spoiled them for the first time. These were grown from seed where they now stand, and some started to bear in the third year and one, a larger tree by far than the rest, not till its sixth year, but it has probably beat them all for a life yield. I shall pass on to the Sandcherry plum hybrids.

The first of these is the Compass cherry, which originated with H. Knudson of Springfield, Minn. This is an open cross of wild plum and sandcherry. It will not go much farther north than our place, but is a vigorous tree and fruitful and said to be short-lived, but if grown in bush form, branching at the ground, I see no reason for short life, if old branches are occasionally cut out, making the tree shoot up again from the bottom. Indeed, this system is desirable with all the sandcherry plum hybrids, and is a great advantage in our north country as a preventative to sunscald and rabbit injuries.

Prof. Hansen of Brookings, South Dakota, is a strong advocate of this system of growing the plum sandcherry hybrids he has produced, and especially in windy or northern districts should this be followed up by practice. The Compass cherry, although an old variety, is still very largely sold by nurserymen, and I might here say that when ripe the fruit is not much injured by 17 degrees of frost, as I picked and sold it after to visitors at our place who were very pleased with it. This is also characteristic of the fruit of Opata, Sapa, and in fact all the sandcherry hybrids. I will refer to this later in another connection.

Picking Prunes in Winter

The Opatá was bred by Prof. Hansen by crossing Burbanks Gold Plum, a Japanese variety for which he sold propagating rights to Starks nursery for \$3,000, with the Dakota sandcherry. It is easily grown in bush form by cutting back to a stub when planting. It often bears the year after planting and ripens from August 10th onward, clinging to the tree even to the drying stage, and is fit to eat when a blush is on one side, and at this stage makes delicious preserves similar to the Greengage. It has a very small pit for the size of the fruit which ripens up blackish red and quite firm and sweet. Sapa, which I use as a pollenating mate, for two varieties blooming at the same time are necessary to the successful growing of plums in this country, is a fruit a little later with dark red flesh, which is very attractive cooked or raw. It was bred by crossing sandcherry with Satsuma, a red fleshed Japanese variety. It is rather more dwarf in tree than Opatá and hangs on even better to the tree or bush. Last fall working around the place I frequently discovered the fruit quite palatable in various stages of drying on the tree. The last ones I picked on December 19th after sampling and finding them with no trace of rot but merely dried, I had them stewed like prunes. This shows the possibility of the future. The busy farmer after his fall work is done may then find time at least to pick his supply of dried prunes right off the tree for his year's supply. The same applies to raisins which might be made by using our wild grape and crossing with California raisin grapes. Then we should indeed be free of high transportation charges and dried fruits and independent of the prune and raisin growers of California. Horticultural science has unbounded possibilities for the future benefit of our citizens, and had the Bracken Government, being headed by a scientist, not had the overhead of such extravagant public buildings to struggle with it might have been possible to interest them in doing something along this line, but as it is, we had better all work and assist one another to help ourselves. Other good plum cherry hybrids are Sansota and Cheresota, which are later than Opatá but similar in quality. Wachampa cherry is another with early and sweet fruit, but it bears only on the lower branches, thus indicating that it is not entirely hardy with us.

A few years ago Prof. Hansen sent me a new variety under the name True to Seed, which has since been called Tom Thumb Cherry. It is a seedling of Ezaptan, a red fleshed variety, sister to Saua, and Tom Thumb is also red-fleshed, quite early and prolific. It has never failed to fruit with me the year after planting. Mr. G. F. Chipman, editor of the Grain Growers' Guide, is authority for the statement that cooking in a pie brings out a most delectable cherry flavor. We have never had a chance to try this as ours are always eaten by ourselves and the visitors for samples, but it is good to eat before fully ripe, but is not large for a plum, but still rather large for a black cherry.

The Zumbra cherry originated by the Minnesota Fruit Breeding Farm and is said to be a cross of Pincherry by English black cherry again crossed by sandcherry. It was very prolific with us the year after planting, but the fruit is not free of a slight astringency till fully ripe. As there are no real cherries of the type that grows at the coast or in Ontario that will succeed here I will only say I have tried some by bending the trees down and covering with earth for the winter and have raised a few cherries, but have given them up lately as the game is not worth the candle. Still, some seedlings of Vladimir received from Stevenson's years ago still live and bear a few half-sized cherries of poor quality. These have true cherry leaves and are only four or five feet high and bushy after seven or eight years. I do not consider them of real value. There are some other good hybrid plums, especially for southern Manitoba. Hansen's Kaga, Hanska, Toka and Tokata are hybrids of Chinese apricot with American plum, and are very fine, firm, red fruits, flattened like a Japanese orange in shape, of fair size and well worthy of trial in sheltered places. Waneta and Kahinta are also Hansen hybrids produced by crossing "Terry," the largest of the American plums, with Burbanks "Apple" plum.

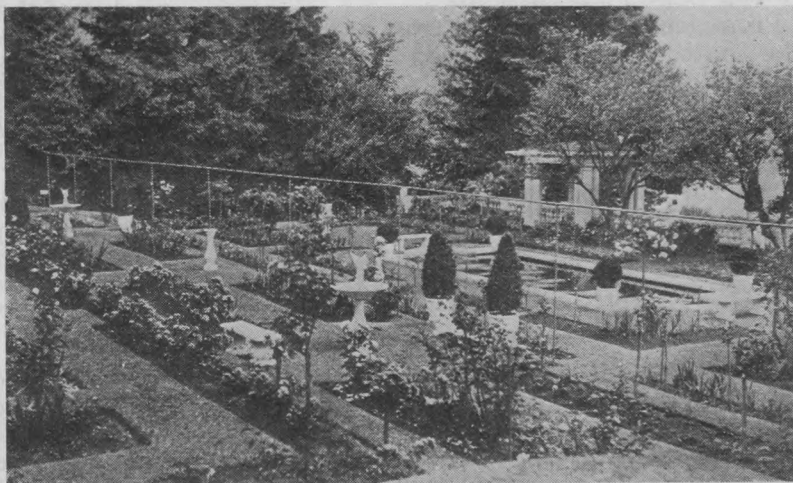
Prof. Hansen advised me Waneta and possibly the others would not likely do as far north as we were, so I did not plant these till 1922, and so have had no fruit yet, but these have done well at points in southern Manitoba, and Tokata has done well with Norman Ross at Indian Head, Sask. But I have late been acquiring a full line of the Minnesota Fruit Breeding Farm hybrids and have fruited three kinds, but as two kinds were gone before ripe I can only describe the Underwood, which is said to be the finest earliest plum from the M.F.B.F. It ripened with me the last week of August, 1923, was yellow with red on it, large and very firm. I was going to bring them down to Winnipeg to the Horticultural Show, but they did the disappearing act after being picked for that purpose. However, I consider them the best quality early fruit I have raised as yet and believe Underwood

will likely prove to be worthy of extensive planting in favored districts or between houses in the towns of Manitoba. It is an upright tree in form.

Owing to writing this paper entirely from memory as the ideas occur to me, I find on reflection I have left out three plums especially worthy of mention. I refer to three of Prof. Hansen's plums, created by crossing Manitoba native plum by Burbanks best California products. These are Ojibwa, Pembina and Cree. Ojibwa was introduced in 1917. It is Shiro by *Prunus Nigra* and Shiro is a Burbank hybrid of four species. So Ojibwa is a complex hybrid of five species of plum, *Nigra Augustifolia*, *Cerasifera*, *Triflora* and *Simoni*. It is rather a small pointed plum at our place, often bearing the year after planting, and is very floriferous. Its flesh is yellow and skin yellow with red cheek. It seems to be the hardiest of these three hybrids. Pembina is larger in fruit and does well in south Manitoba. It is a Manitoba wild plum by Red June. Cree is a Manitoba wild plum by Burbank's combination plum, which was considered the best of a lot of 25,000 seedlings. This variety is a good grower, but the fruit is small, although of good quality.

In conclusion I wish to mention Hansen's Champa Cherry. It is a small tree large in stature for a sand cherry which has a cherry sized fruit, early and black with a long pit. It is quite prolific. This brings me to the end of all at present I think necessary for this paper, although others here might suggest varieties I have not mentioned. If so, let us discuss them and compare experiences.

While I have predicted the possibility of prunes and raisins for Manitoba, and it might be received with derision by some, yet I call attention to a recent newspaper with a cut of a strange looking motor vehicle which the occupants drove in a Toronto street in 1906 at 12 miles per hour and were arrested for speeding. Look at the automobile of today and the aeroplane, and then think horticulturally in the light of the works of our foremost plant breeders, and see if you can vision each household with its own raisin and prune tree.



Rose Garden—Residence of Mr. F. A. Kent, Port Perry, Ontario.

THE WESTERN GARDENER and BEEKEEPER

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Vol. 5 WINNIPEG, JUNE, 1924 No. 8

GREAT PLAINS MEETING

The work of developing new varieties of plants suitable to our climate, and of striving for better results with the vegetables, trees, fruits and flowers that have been established here is carried on scientifically by many independent horticulturists and by the men in charge of the experimental stations throughout the country. For this work the summer is a busy season, and it is much harder for horticulturists to find time for conventions than it is in the winter, but they must get together occasionally in the summer when all plants can be observed at their best. The meetings to be held at Winnipeg on Aug. 11th and 12th, and at Morden on Aug. 13th deserve to be, and probably will be, attended by a large number of enthusiastic men and women. Winter hardiness of trees and herbaceous perennials is a subject of prime importance, and these meetings will furnish an extraordinarily good opportunity for the study of it.

Prominent horticulturists from various parts of the United States and Canada are expected to visit Manitoba on this occasion, so that it will be international in scope. The gathering has been called by the Great Plains branch of the American Society for Horticultural Science, of which Mr. W. R. Leslie, Experimental Farm, Morden, Man., is the secretary.

STINGLESS BEES

American scientists have collected some stingless bees, which may be crossed with the ordinary stinging varieties to develop a harmless type of honey gatherer, according to a feature story appearing in a western newspaper. If, by cross-breeding, large numbers of stingless bees

can be produced, it is possible that they may become as popular with apiarists as polled cattle are in the beef industry. People who go for their holidays to country places where bees are kept will, no doubt, be loudest in praise of any work undertaken to make it no longer dangerous to associate with bees. The experienced beekeeper has no trouble with stings in doing his chores in the apiary, and does not fear the little workers, like a stranger does. It is the same with bees as with most kinds of livestock, when you get to know them, they are not likely to hurt you.

A CANNING FACTORY

It is sometimes a serious problem for a market gardener to know what to do with all his vegetables when in the fall of the year he finds that the local market is oversupplied. Potatoes and some other vegetables can be shipped in car-loads to distant markets, or they can be stored, but there are some vegetables which cannot be disposed of profitably unless there is an immediate market for them when they are harvested. Almost any vegetables or fruits can be kept in cold storage, but the expenses so incurred may not be justified by the returns to be derived ultimately from the sale of them.

In most districts where vegetables or fruits are grown on a large scale, it has been found that the best way to take care of the surplus crop is to can it, and sell the canned goods later on, when people demand such food, because it is the next best thing to the fresh produce, which cannot be procured except in season. Even in a family canning is generally resorted to for making the best use of the products of the home garden. The motto is: "We eat what we can, and what we can't we can." Which reminds us that after the things in the garden start growing, it isn't long before some of them will be ready for harvesting, and it will be time for the canning or preserving to begin. Are you preparing for the good work, or rather is the wife preparing for it?

In East Kildonan, Manitoba, there is to be a factory that will can some of the products of that fertile gardening district and should enlarge the market of the local growers, besides making a new industry to employ labor and help keep the people's money near home. The Kildonan Canning Co., Ltd., was operating on a limited scale for 1923, but it is increasing its capacity materially by the construction of a new factory and warehouse. The building permit was taken out recently, and the work of construction is under way. The factory proper is to be a building 40 ft. by 76 ft., and the warehouse adjacent to it is to be 48 ft. by 28 ft. The enterprise is financed by local capital.

Such an enterprise should have the hearty support of both producers and consumers. The canning of local produce whether in a commercial way, as in a factory, or in a private way, as in the home kitchen, is a good thing both for economy to the producers, and health to the consumers.

ANSWERS TO QUESTIONS

The Editor kindly invites all readers of the **WESTERN GARDENER AND BEEKEEPER** to write for advice in their gardening difficulties; this will be given most willingly through these pages. All questions received not later than the 15th of the month will be answered in the following issue.

Address all enquiries to The Editor, **THE WESTERN GARDENER AND BEEKEEPER**, 171 McDermot Ave., Winnipeg.

HULLS OF SEEDS COME UP

L. T. M., Melville, Sask., Q.—A great many young flower plants come out of the ground with the hull of the seed sticking tightly over the leaves, and this sticks on so tightly that the plant dies. How can that be remedied?

A.—When the hulls come up on the young leaves instead of staying in the ground with the seed, it is probable that the plant development has suffered from too much variation of temperature. It may be, however, that the seeds that were planted were defective. Plants of the bean family are most likely to be troubled in this way. You do not say what kinds of young flower plants you have been growing. The best thing that you could do to make the plants come up properly would be to keep them in a warm place while they are getting a start. If it is an outdoor garden that you are working with it will be a different matter to keep it warm than to keep a number of flower pots warm, but by surrounding the spot where the flowers are planted with some boards and things for shelter you may be able to do some good.

BERRY BOXES

Mrs. G. L., Colonsay, Sask., Q.—Are there any firms in Winnipeg that handle strawberry and raspberry boxes? If so, kindly give address; if not, the nearest place.

A.—The quart-size wooden boxes for berries are handled by a firm that specializes in woodenware, Walter Woods, Ltd., Sutherland Ave. and Robinson street, Winnipeg.

A warning has been issued by Mr. Geo. E. McIntosh, fruit commissioner of Canada, that after the first day of October, 1924, it is required by statute that boxes used for marketing berries or currants shall be of either one quart or one pint capacity. The dimensions for these sizes are given as 67.2 cubic inches for quarts and 33.6 cubic inches for pints. It is recommended that berry and currant growers place their orders for boxes of these capacities early, because the manufacturing or sale of boxes of other sizes will not be permitted after that date.

FEATURING A SLOUGH

Dr. G. A., Regina, Q.—Will you please let me know if there is any book on ponds or sloughs. I have a slough on my farm that I think would be made very attractive with some attention. In the Old Country ponds and pools are cared for. If there is any

book of that kind I would appreciate it if you will let me know, or where I could get advice.

A.—There are fifteen books on landscape gardening listed in a catalogue which we have at hand, ranging in price from \$20.00 to 50c. Although none of them deal solely with ponds or sloughs, there is something on that subject in the majority of them. Some of the books we might name are: *Landscape Gardening*, by O. A. Simonds, \$6.00; *Landscape Gardening*, by Ernest Hilborn, 50c; *Landscape Gardening* by Prince Puckler Muskan, \$5.00, all handled by A. T. de la Mare Co., Inc. Definite advice will be gladly given you also by any of the big nursery companies in Western Canada.

FOREST PROTECTION

Q. No. 1.—To what extent are aeroplanes being used this season for forest protection?

A.—The Ontario government will be a heavy user, with thirteen planes in the air, working mostly in the unorganized districts.

In this area canoe patrols will be

discontinued and the general ground force reduced. A few machines may be used in British Columbia. Manitoba will have eight machines and Alberta six. Quebec will employ five machines working out from Roberval and three other machines from other stations.

Q. No. 2.—I have heard that hundreds of ten and twelve-year-old children in Southern Alberta and Saskatchewan have yet to see their first tree. Can this be true?

A.—It is true. Lecturers of the Canadian Forestry Association were recently in a district where out of 24 senior school children only five had ever seen a tree of any kind. These same lecturers showed many audiences in Western Canada their first motion pictures and gave them their first radio performance.

Q. No. 3.—Where can I obtain cheaply a first rate book on Canadian trees?

A.—The best book on this subject was issued by the Dominion Forestry Branch, "Native Trees of Canada." It can be had for 50c from the King's Printer, Ottawa.

PLANTING VEGETABLES IN JUNE

Generally it pays to keep sowing seeds in the garden throughout the month of June. Some vegetables cannot safely be planted anyway until about June 1st, because of the danger of frost. Some years there is great slaughter of corn by June frosts. When the season is free from severe frosts, it is best to plant corn about the middle of May, but it is all right to plant it early in June. If there is a good supply of June rains the chances are good for a big crop. The seeds that are planted late may never grow, but just die in the ground for lack of rain, but watering by hand will take the place of rain.

Beans are also easily killed by frosts, and if they are to be harvested as green beans (the way they are commonly used in the summer and fall) it is all right to sow them along in June.

Lettuce and radishes, the popular green relishes, should be sown both early and late. After the early crop is all consumed another crop should be coming on. It is nice to have these things fresh all summer. Constant hot sunshine has a tendency to make them too tough; so they should be sown in a shady part of the garden. For early plantings shade is not so important, but in mid-summer the force of the sunshine is much more trying to tender vegetation than in the early part of the summer.

Gardens often do well without any artificial watering, but applying water with a hose or by shallow irrigation ditches between the rows, or by means of a watering can, is time well spent, especially with things that are sown late. Vegetables, as they are when mature, consist of a large percentage of water, and they must get water in some way during the growing period. Too much water, however, is a bad thing. One may kill a crop by drowning it. The ground should just be kept damp, and it should never be made so wet that there will be puddles lying about.

In keeping the ground damp, cultivation is the greatest thing. If a garden is cultivated or hoed once a week in June, the ground will be pretty well kept from drying out. This same work is required in the garden to keep down the weeds. June is the great growing month, not only for man's special crops, but also for weeds. A lot of cultivating, hoeing and hand picking are necessary in most gardens to keep down the weeds. Weeds rob the ground of moisture, as much water being required for growing a crop of weeds, as for growing a crop of good vegetables. Eliminating the weeds, therefore, works incidentally toward the same end as irrigation, and hoeing both kills weeds and keeps the top of the soil in a fine condition for protecting the moisture, which is underneath, from the wasting action of the sun and atmosphere.

Too much water is commonly given in transplanting. Do not plant anything in a puddle. Ideal ground for planting is moist, but crumbly and not sticky. The transplanting of young tomato plants is done usually in June, as there is too much danger of night frosts up to the end of May. Watering the plants just after they are planted is all right, but the ground should not be given more water than it can readily absorb.

Watering is better done in the evening or on a cloudy day, so that there will not be too rapid a drying-out action. A good idea after pouring a little water onto the soil about a young plant is to cover the wet soil with a thin layer of fine dry soil.

There are various other things that are put into the ground in June, including some things which may also be planted early. It is good to have some early carrots, but a late date of sowing is usually recommended for the main lot of carrots and parsnips to be grown for winter use.

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The American Pomological Society's Code of Fruit Nomenclature

This code aims to establish a simple and clear system of pomological nomenclature that shall be appropriate and stable. Accordingly it is urged that all persons naming new varieties of fruits choose simple one-word names that are fittingly expressive of some character, quality, place, person, or event associated with the source, time or place or origin of the variety.

The paramount right of the originator, discoverer, or introducer of a new variety to name it, within the limitations of this code, is recognized and established.

The term "kind" as herein used shall be understood to apply to those general classes of fruits which are grouped together in common usage without regard to their exact botanical relationship, as apple, cherry, grape, peach, plum, raspberry, etc.

I. Form of Names

1. Names of new varieties shall be of one word preferably, but two words may be accepted. Names of existing varieties shall not be changed in such way as to lead to confusion or loss of identity.

2. The spelling and pronunciation of a variety name shall be the same as that of the person, place, substance, circumstance, or quality from which it is derived.

3. A possessive noun shall not be used.

4. Initials should not be used as a part of a variety name.

5. A name shall not be formed by the compounding or hyphenating of two or more existing names, but this does not prohibit the formation of a one-word name by the use of parts of two or more existing names. The hyphen shall not be used between the words of a name. Thus, neither, Bartlett-Seckel nor Bar-Seck may be used, but Barseck is admissible.

6. Such general terms as seedling, hybrid, beurre, damson, pippin, rareripe, bigarreau, should not be used.

7. A variety imported from a foreign country should retain its foreign name, subject only to such modification as is necessary to conform to this code, and provided that names having a recognized English equivalent may be, but are not necessarily, so rendered.

8. The name of a person shall not be applied to a variety in his lifetime without his consent.

9. The name of a deceased person shall not be applied to a variety except through formal action by some competent pomological body, preferably that with which the deceased was most closely associated.

II. Priority, Usage and Duplication

10. The name first published for a variety shall be the accepted and recognized name, except when contrary to the provisions of this code; but names established by usage in American pomological literature may be re-

tained even though they do not conform to these rules.

11. A name once used shall not be used again for a variety of the same kind, except that a name once established through long usage for two or more American varieties shall not be displaced for either or radically modified unless a well-known synonym can be used in its place; or when no such synonym is available, the varieties bearing identical names may be distinguished by the addition of the name of the author who first described each, or by some other suitable distinguishing term.

III. Publication, Description and Citation

12. Publication consists in: (1) The public distribution of a printed name and description or characterization of the fruit; (2) the publication of a new name for a variety described elsewhere under a different name, number, or other untenable designation, the synonym being given.

13. Publication of a name may be made in any book, bulletin, report, trade catalogue or periodical of public distribution and bearing date of issue.

14. But a variety name may be established by current usage in the locality of its origin, when well-known, and shall be considered as published and have precedence over a later printed name for the same variety.

15. Complete description of a variety consists of a detailed account of the characteristics of the plant, foliage, flowers, fruit, and habit of growth, so as to distinguish it from other varieties of similar appearance.

16. The type of a variety is the fruit of the original plant; and type descriptions, or illustrations shall be made from material produced by the original plant, or when this is not available, from a plant as near as possible to the original in a sexual reproduction, and preferably grown in the same pomological region.

17. The full citation of a variety name consists of the name of the author who first described the variety, and the name, page and date of the publication in which the description first appeared. An author-citation following a name refers to the author of the original description of a variety; e.g., Turley, C. P. C. Names of authors and published works may be abbreviated, in accordance with the usages of this society.

GLADSTONE

A flower, fruit and vegetable show is to be held by the young but active horticultural society of Gladstone, Manitoba, August 22-23. The officers for the current year are: President, Magnus Wilson; Vice-President, R. Diamond; Secretary-Treasurer, A. R. Walker; Directors, Mr. David Smith, Mr. S. H. Fahrni, Mrs. S. M. Taylor, Miss E. Anderson, Mr. J. D. McLaren.

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PERENNIAL FLOWERS FOR THE FARM HOME

In the beautification of the surroundings of the prairie farm home there is nothing more satisfactory than perennial flowers. The tops of these plants die off to the surface of the ground each winter, but the roots are hardy and live on from year to year. Thus they do not require planting each year as do annual flowers, but once located, spring up and bloom indefinitely. The care of perennials requires the minimum amount of labor. They need to be dug around once a year to keep out grass and weeds, and the surface soil hoed a few times during the season for the same purpose. Grass is the worst enemy of perennials. The place chosen for the perennial bed or border should be thoroughly rid of grass before the bed is started. A year's thorough summerfallow should be given and all grass completely killed out. This delay and labor is amply repaid in the improved results and ease of keeping the bed clean later. Then watchful care must be kept to prevent grass from spreading in later.

Perennials cannot succeed under or near shade trees. The roots rob them of moisture and plant food and the tops rob them of sunlight. However, they will do better if enclosed by a shelter of trees that will protect them from the wind. Such shelter should be sufficiently far away that neither roots nor shade will reach the perennial bed. A low hedge is all right as a neighbor for a perennial bed, provided it is kept within bounds by trimming.

A long border is one of the most effective arrangements for perennials. A low hedge along the back and a grassy lawn in front form the proper environment. The higher growing perennials along the back and a gradual slope down to the lowest in the front is the best arrangement. A similar border along a walk or against the foundation of a building is also very effective.

There are many varieties of perennials that are quite hardy in Manitoba. In making a choice one should endeavor to cover the whole summer season with bloom by choosing varieties that bloom at varying dates. Space forbids giving a full list or description of suitable perennials. Persons interested can get fuller particulars from any of the experimental farms. However, the following are a few of the most outstanding hardy and successful perennials: Larkspur, Golden Glow, Lychnis, Phlox, Subulata, Iris, Peony, Columbine, Perennial Flax, Tiger Lilly and Autumn Daisy.

EASTER LILIES FROM SEED

In his report for 1922, the Dominion Horticulturist, Mr. W. T. Macoun, gives account of an experiment with the growing of Easter lilies from seed. Self-fertilized seeds of *L. longiflorum*, variety *formosum* and variety *giganteum*, were sown in the Experimental Farm greenhouse at Ottawa on Oct. 18, 1921. Both varieties germinated early in November, and on March 13,

1922, twenty specimens of each were potted, one to a two and a half inch pot. On June 1 they were transplanted into a cold frame. On Sept. 22 they were re-potted into five-inch pots and taken back to the greenhouse. Eight of the *formosum* variety bloomed in September and October and the twenty all bloomed during April and May. The first specimen was 24 inches high and had nine blossoms on the stem. Those that had previously bloomed divided into two and had three or four blossoms on each stem. *L. longiflorum giganteum* were not so successful as the *formosum* variety, the plants being dwarfer and the blooms not so well formed.

A NEW FLOWER

Lilium Sargentine (F.) crossed with *Regale* (M.), in general form resembles *Regale*, but is considerably larger and more perfect in form. The three outside petals carry more color and are of a deeper tone. The odor is more delicate. The stigma is colored, shading off down the style and the stamens are of a darker brown than *Regale*.

The originator of the plant, which is called the *George C. Creelman*, is Miss L. Preston, O.A.C., associated with Prof. J. W. Crow.

New Plant Introductions Recorded

The Canadian Horticultural Council has accepted for recording several new varieties of plants. These will be tested in the official trial plots and, if found to possess outstanding merits, will be registered and certified, thus protecting the originator. The originations hitherto submitted and accepted for recording include three varieties of the gladiolus, two varieties of the chrysanthemum, one rose and a new strawberry.

In one instance the registration committee of the council were confronted with the question of changing the name of one of the plants presented. This was the chrysanthemum registered as "*J. R. Booth*," an immense yellow originated at the Central Experimental Farm, Ottawa, and under test by a firm of growers in the United States. At the New York Flower Show this variety attracted the attention of the Japanese Ambassador, who asked that its name be changed to "*Princess Nagako*." The registration committee could not see their way to agree because of the possible confusion that might arise, and in this they were upheld by the Board of Directors of the Council.

The committee has reached the decision to officially record the characteristics and origin of a number of standard varieties of fruit. These are the "*Hilborn*" black raspberry, the "*Joscelyn*" gooseberry, the "*Herbert*" raspberry, the "*McIntosh*" and "*Fameuse*" apples, "*Saunders*" black currant, the "*Fitzgeralds*" peach, and the "*Windsor*" cherry, all of which originated in Canada.

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Needs of Peonies

Water Often of Much More Benefit Than Fertilizers

It seems difficult to realize that Peonies, which are known to be heavy feeders, can be easily harmed by too much fertilizer. Yet repeated experiences on the part of observant growers seem to prove that when Peonies develop disease of any kind it is very often the consequence of too liberal manurial applications. Even bone meal, the best fertilizer for Peonies, if used too generously will kill the plants outright. When planted in moderately rich new ground, Peonies need no extra feeding for a year or two. If, however, the grower feels that he is not doing his plants justice unless he feeds them in some way, let him apply a handful of hard wood ashes each spring, keeping the ashes three or four inches from the crowns.

In most gardens Peonies suffer for lack of water more than from lack of fertilizer. Water they must have if they are to do their best. This is particularly true in May and early June when the buds are being formed. It is true that nature usually provides plenty of water at this season, but if she fails to do her part, artificial watering will be necessary in order to have a profusion of blooms.

Water is needed almost as badly immediately after the flowering season, for it is then that the buds are being formed for the next spring. If one should dig away the earth at the top of the crowns, one would find many little white fingers starting into growth. The plants are very active at this time and need much water in order to supply the growing parts with plant food. A lack of water is certain to result in smaller buds, with a corresponding weakness of stem the following season. If it is difficult to supply water artificially, constant cultivation is the next best thing. For that matter, though, Peonies need to be cultivated frequently, regardless of other conditions.

Many growers believe that their plants are greatly benefited by being sprayed, first when the plants are a few inches high, again when the buds have begun to form, and finally two or three weeks later. Bordeaux mixture is often used, but has a tendency to discolor the foliage. It can be used without damage for the first spraying, however, when the ground around the plant as well as its sprouts should be wet. A writer in "Better Plants" recommends two teaspoonfuls of formaldehyde and two ounces of well dissolved sulphur-tobacco soap in four gallons of water for later applications.

When Peony flowers are being harvested, care should be taken not to cut below the second or third leaves. It may not be possible to get very long stems without cutting almost to the ground, but such treatment is certain to seriously injure the plants. Peonies cut in the bud give the best effect when taken indoors, especially those having delicate shades which are easily bleached by direct sunlight. And of course Peonies which are to be shipped should always be cut in the bud state.

—"Horticulture."

Disbudding Peonies

Usually a short statement is allowed to suffice for the subject of disbudding peonies, such as "In order to secure larger blooms, pinch off all side buds when the size of a small hazelnut." This may be enough to say under certain conditions, but there are so many important details that more can be told with profit.

The idea of disbudding is to divert the strength of several buds on one stalk to a single bud, and thinking to do this as effectively as possible I once supposed it should be done as soon as the buds could be taken off, when still quite small. But in so doing, I wounded the main stem, and as a result, all of the centre buds remaining died. The buds should be from one-fourth to one-half inch in diameter before removal, and should have developed some stem of their own, say an inch or more, branching out from the main stalk.

There is still danger of damaging the main stalk if the bud is simply jerked off with a straight pull. Take the bud between the thumb and forefinger, turn it at right angles and pull gently. It will part from the branch stem at the base of the bud. Any stub of stem remaining can be cut off when the bloom is cut, if objectionable then. Or if disbudding some variety with long side stems, like "Edulis Superba" take the stem midway, bend and pull gently. Under no circumstances try to separate the branch stem where it joins the main stem. If a wound is left there, it may cause the bud to die from loss of sap, or blight may lodge there and get in its work with the same result.

Shears might be used, but if so they must be often disinfected. And whether any blight is apparent or not, if one is using their fingers, they should be dipped in some solution occasionally. I use permanganate of potash solution. It discolors the fingers for a few days, but is a non-irritant and there is no danger of anyone mistaking the poison for a harmless liquid. Shears get clogged easily, and are more apt to bruise the stems than where the fingers are used as directed above. Moreover, the buds removed should not be allowed to lie scattered on the ground, as this makes the spread of blight from any diseased buds almost a certainty. So there is no economy of labor in using shears. Make it a rule to touch only the buds to be taken off, then even if fingers are infected, there is little chance of spreading blight. I dip my fingers in the solution after finishing every clump showing blight, and after every four or five healthy clumps.

Put the buds in a pail, and burn as soon as possible.

Now all this may seem trivial, but careless disbudding has cost many a fine flower, the loss of which has been ascribed to shy blooming habits or to a late frost.

In planting where all flowers are sent to market, make it a rule to

leave only one bud on a stalk. And if any stalks show buds lacking in vigor, disbud them completely. The lightening of the load for the whole plant will pay in better blooms over a period of years. If it is desired to get specimen blooms, disbud all but four or five of the best stalks. Some say to cut off stalks when coming through the ground, leaving only a few, in order to get best blooms, but this looks too severe to me. The circulatory system of the roots can not readjust itself in one season to feed four or five stalks instead of twenty, and it does not seem reasonable that the disbudded stalks would rob those with blooms on them.

There is a certain charm in a cluster of blooms on one stalk, so that I never disbud all stalks of a variety "La Rosiere," with six to nine blooms on a stalk, all of nearly the same size, is much better left alone. "Therese," usually setting five or seven buds per stalk, is a thing of wondrous beauty when properly opened. Sometimes the centre flower will be lilac-pink and the side blooms almost milk white, again the colors will be reversed. If disbudded, this beautiful contrast is lost.

A stalk with five to seven buds may be partially disbudded, and the size of flowers improved, though still keeping the cluster effect. Remove the weakest buds. Disbudding hastens time of bloom about two days, ordinarily, and may be employed in pollenizing for seed, to hasten a later variety desired for crossing on an earlier one. Otherwise, Peonies to be used in pollenizing should not be disbudded, as blooming time is lengthened and number of possible crosses increased by the succession of side blooms, and often pollen or seeds can be secured from these side blooms on fine varieties when the centre bloom, being completely double, will not give seed or pollen at all.

A late variety may be retarded by pulling off the centre bud, and leaving one or more side buds. In this way season of bloom may be lengthened several days. Some varieties which are very certain about opening, like "Madame Fould," can be made to yield flowers by leaving only one bud and that a side one, on each stalk. It is surprising how fine some of these side blooms will be, when the centre bud is removed.—Edward Auten, Jr., in "The Flower Grower."

PLANTING GLADIOLI

Gladiolus growers who wish to have late-planted bulbs flower quickly practise soaking them for a week or ten days before they go into the ground. If there are many bulbs, they are placed right side up in shallow trays with sufficient water to keep the bottoms of the bulbs wet. This plan induces very quick growth, especially if the trays are kept in a fairly warm

place, with the result that the bulbs flower much earlier than when planted directly in the cold earth. It is helpful also to soak bulblets for a few days before they are planted.

When this soaking process is carried out, the bulbs may be planted four or five inches deep and still produce stalks quicker than when unsoaked bulbs are put in only an inch or two under the surface. Deep planting is important in the home garden, especially for the larger bulbs, although some commercial growers practise very shallow planting in the belief that in this way there is a greater increase of bulblets.—"Horticulture."

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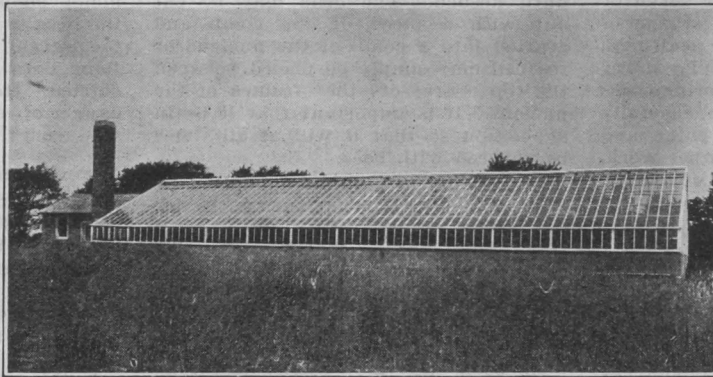
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Summer Work in the Apiary

L. T. FLOYD

After the colonies are well under way in the spring and cover seven or eight combs they reach the season of year when they are apt to be neglected. We have many beekeepers who worry over their colonies in the spring, fuss with them and watch them carefully until they pass the danger point, and then busy themselves with other work, and lose the profits because of a little neglect.

The Use of Queen Excluders

I believe that the number of swarms in some apiaries would be reduced greatly if the queen was allowed the run of two ten frame hive bodies instead of one. It seems to be the recognized custom to place the excluder between the first and second hive bodies, regardless of the effect. An interesting experiment might be suggested along this line.

If a beekeeper would select a number of colonies of equal strength, or so the groups would be fairly uniform and not less than five in each group, and operate one group without excluders, a second group with excluders between the second and third supers, and the third with the excluder between the first and second stories as is the usual custom, and keep an account of the crop from each group and the number of swarms. I believe the results would furnish very interesting and valuable information. When the queens are crowded down to ten frames a large number of swarms result and much manipulation is necessary to control them.

Importance of Good Queens

There is the danger of a queen here and there in the apiary failing at any time during the season, even after requeening, and the careful apiarist will see to it that no hive is without a laying queen at this time of year. Large average crops are only secured by attention to these details.

If a few extra queens can be reared early in the season and kept in nucleus colonies ready for these emergencies, the crop will be increased by many pounds of honey. A simple method of securing these extra queens early in the season would be to remove the queen from a strong colony around June 1st. Take her on a frame of brood and bees and make a nucleus. Later when the queen cells are ripe, which will be in about eight days, these queen cells can be cut carefully from the comb and introduced to small

nucleus colonies and then held over until needed. The cells may be cut out with a piece of the comb and grafted into a comb of the nucleus or the cell may simply be placed between the top bars of the frames of the nucleus. It is important that it be in a position so that it will at all times be covered with bees.

Objections, no doubt, will be taken by some to this method of rearing queens, but it is a simple method of rearing a few and is worth a trial. Isaac Spillett, the veteran beekeeper of Dauphin, suggested a method of making increase at a short course meeting last winter. His plan is briefly as follows:

As soon as the colony is strong enough to swarm remove the queen on a frame of brood from the colony and place in the centre of an empty hive, fill up with combs, then remove the old colony to a new stand and place the newly made colony with the old queen on the old stand and introduce a new queen to the queenless part.

If new queens are not ready all the queen cells except one should be removed one week after the division.

Use Plenty of Supers

In every case see to it that colonies are not crowded for room in which to deposit honey. They should be watched carefully in the month of August.

In working for extracted honey it is never advisable to place a super containing only foundation between a super of honey and the brood nest. A better plan would be to take half the combs on which the bees have been working and place in the new super and then place it on top of the one already worked. Placing an empty super between the brood nest and the super of honey is discouraging to the colony and sometimes causes them to make queen cells and cast a swarm, while they can be coaxed above by giving them a start as suggested. In these manipulations it is never advisable to place frames containing comb foundation on the outside next to the boards, as it is cool there and difficult for the bees to work the wax.

Care to Prevent Robbing

At all times, care should be taken that the bees do not start robbing. Colonies should not be left open for a long period when there is no honey coming in. For this reason it is wise to place bricks or some weight on the hive covers to prevent them being blown off the hives in wind storms.

Pieces of broken comb containing honey should not be left exposed for the bees to clean up. It is much easier to prevent robbing by these precautions than it is to stop it after once started. However, there is little or no danger of robbing while nectar is available from the flowers.

Water Should Be Provided

On visiting G. E. Bissonette's apiary on May 20th, the writer was surprised to see the bees carrying water from a large trough provided for them in the yard, even when so cool that few bees were noticed flying in the yard. Mr. Bissonette stated that his 150 colonies were using two pails of water a day.

In this apiary, water was provided in a trough with a floating cover made of slats nailed so closely that a bee could not possibly be drowned between the slats. Before this system was devised, the bees went to the river nearby and many dead ones were noticed along the shore where they had been caught by little waves that wet and chilled them so that they were unable to take flight again. Comparatively large quantities of water are mixed with the honey to feed the young larvae, and unless this is provided they will hunt for it around pumps and other places where their presence is not desired.

APICULTURAL CONGRESS

The seventh International Apicultural Congress will be held in Quebec, September 1st to 4th of this year. This is the first opportunity for many years that the beekeepers of this continent have had opportunity to attend an International Apicultural Congress and it is hoped that they will take full advantage of this opportunity. In order that North America may be well represented and do its share for the advancement of beekeeping through this Congress, individual beekeepers should send in their active membership fee of \$2.00 to Mr. Cyrille Vaillancourt, Minister de l'Agriculture, Quebec. Special attention should also be called to the desirability of many beekeepers' associations joining the Congress, for which a fee of \$10.00 is charged. Each association may send two delegates. The American Honey Producers' League's delegate is Mr. C. P. Dadant. Mr. G. M. Newton will represent the Manitoba Beekeepers' Association, and probably Mr. L. T. Floyd.

The Manitoba Honey Pool

A meeting of the marketing committee appointed at the last beekeepers' convention was held in the Royal Alexandra Hotel on the evening of May 1st. President G. M. Newton was in the chair and the following members present: Alex. Piercey, Dugald; Wm. McRae, Clandeboye; W. R. Blackmore, Westbourne; G. E. Bissonette, St. Jean; B. Brewster, Greenridge; C. E. Burrows, Winnipeg; Robt. Hedley, Oak River; C. E. Neil, Kelwood; Chas. Ward, Portage la Prairie; and a few other beekeepers who happened to be in the city at the time.

After the subject had been discussed for some time it was finally agreed that a system of marketing similar to that carried on by the California and Colorado associations would be the best for this province and for this purpose a separate association would need to be organized.

Mr. R. M. Muckle was appointed secretary "pro tem," with authority to go ahead and organize an association to be known as the Manitoba Honey Producers' Association, and ask for contracts based on an average crop of 60 lbs. per colony.

The forms of contract with the prospectus will be mailed out to every beekeeper in the province before the issue of this paper reaches its subscribers.

This association is to be a non-profit organization for the marketing of honey at cost, no person being allowed to own more than one share or exercise more than one vote and none but beekeepers being eligible as members. The beekeeper agrees to deliver 60 pounds of honey per colony to the association, or the total yield if it be less than this, and this honey is to be packed in containers as advertised by the organization with the idea of establishing a market for a standardized, quality product. The association agrees to handle as much more than the 60 pounds per colony as is sent in so long as it is the product of a bona-fide member.

The honey will be graded in Winnipeg under government supervision and grades will be set from year to year by a board composed of a member of the beekeepers and representatives from the provincial government and from the wholesale and retail dealers' associations. All merchandizing is to be done by the association at a cost of not more than 6 per cent. of the market price. This is estimated at about ¾ cent per pound. Payment will be made on the basis of 60 per cent. on delivery and the remaining 40 per cent. within three months.

Mr. Newton has said that he believes a Dominion honey producers' association should be formed, which would be a much more powerful and effective organization than a provincial organization, or than one made by the Manitoba Beekeepers and the Ontario Beekeepers in combination. The formation of a selling agency for the whole Dominion is expected to be discussed at the international meeting at Quebec in September.

What is being done in a co-operative way in the marketing of Ontario honey is told by "The Farmers' Sun":

When the executive is enthusiastic, the membership loyal and the market reasonably good, a co-operative marketing organization should be on a fair way to success. All three factors have helped to put the Ontario Honey Producers, organized last spring, on its feet as a going—and growing—concern. With nearly eighty-five per cent. of the province's honey crop in the Association's hands, with the domestic market stabilized, and new markets opening up overseas, the optimism that abounds in the association's head office in Toronto seems to be well justified. "We have made much more rapid progress than we had ever hoped for," said Secretary W. A. Weir to The Sun. "As a direct result of our operations, the honey markets in the Dominion have been much steadier than in the past. In August strained honey quotations opened at 9½ cents per pound. By October 1 they had gone up to 11 cents and they have hovered close to this mark ever since. We have handled over 1,300,000 pounds of honey for our members. Close to 85 per cent. of the commercial honey crop of this province is in the association's hands, and the few big beekeepers who did not join us at the start are beginning to sign up now."

Overseas Markets

Manager A. G. Halstead is at present in Great Britain, looking over the prospects for marketing Ontario honey in the Old Country and in continental countries where the currencies are still fairly sound. So far Mr. Halstead's investigations have been decidedly encouraging. He has sold for the association 13 cars of honey of all grades, which have been made up from honey from all parts of the province. There is a good market for the lower grades of honey in England, where they are used in manufacturing other confectioneries and foodstuffs. Belgium and Holland are fond of buckwheat honey. The market in Britain for choice grades offers a splendid field for development. Mr. Weir commented on the fact that Western Canada, with only a few millions of population, took 75 cars of Ontario honey, while in Britain there was a consuming market of over 40 millions. The high quality of the best Ontario honey is a decided asset in popularizing it on new markets; Ontario honey exhibits have won consistently wherever shown. A win at the British Empire Exhibition this year would be a splendid advertisement, and it is confidently expected that Ontario beekeepers can win in competition with the apiaries of the other Dominions.

Bottled Honey

Arrangements have been made to have part of the British shipments bottled in the Old Country and sold under the "Beekist" brand adopted by the Ontario Honey Producers. This bottled honey will be sold through a firm that has branches in all parts of the United Kingdom. It is also intended to put bottled honey on the

domestic market this year. A bottling plant is being established in Dunnville to take care of the Canadian trade; the equipment of the largest and most up-to-date honey bottling concern in the province has been bought out by the Honey Producers and will be used in their own plant. In addition to supplying bottled honey for the retail trade, it is planned to put up special "individual" bottles for dining car and hotel use, which is not only a source of revenue, but a first rate means of advertising the brand and product.

Manitoba's Production

Manitoba's honey crop is increasing at the rate of a million pounds a year. In 1921 the crop reported aggregated 904,000 pounds; in 1922, 1,800,000 pounds; and in 1923, 3,041,712 pounds. The average per hive in 1923 was 156 pounds. This rapid increase is accounted for by the fact that the government of this province has gone seriously into beekeeping, and has provided experts to assist all those who are anxious to begin. Manitoba has always been considered only as a grain-growing province, and, although fruit is being grown in increasing quantities, it still imports the bulk of its fruit, and wherever fruit is scarce, honey finds a market.

Occupies Favorable Position

Manitoba because of its central location is particularly favored, as it can secure quickly and cheaply supplies of package bees from the Southern States. These states have their principal honey flows in February, March and April, and are through with the bulk of their bees by the time the spring opens in the north, so they pack them up in screen wire boxes and ship them north on fast express trains, reaching their destination in from four to six days, to start the summer all over again about April 20th. Last year 3,000 packages were handled in this manner. Two pounds of bees secured at this time gave a surplus crop of over two hundred pounds of honey by September.

This work has been particularly attractive to Central Europeans. With some knowledge of bees before coming to Canada, some of these have apiaries comprising five hundred hives.

Extracted honey is generally produced, but there is a splendid market for comb honey, but so far the bulk of comb honey reaching this market is imported from the United States.

Very little disease has been found in this territory, and the government has provided inspectors who are continually on the watch for any outbreaks.

The honey produced here is light in color, mild in flavor and very thick and will make a splendid product for export as soon as the home market is well supplied. There are still hundreds of miles of the best beekeeping territory without a single hive and tons of splendid honey go to waste as the inhabitants of these localities are only interested in grain-growing.

The Italian Bee

MORRIS SPENCER

After the beekeeper has his apiary well started he naturally begins to think—"What is the best breed of bee, taking all things into consideration?" After he looks into the matter a little he finds there are hundreds of species and that there have been imported into the United States a dozen or more of these.

"Well," he remarks, "those little blacks that I have in my hives now were brought into this country by the Germans and Spanish, but they are too excitable a bee to work with. Just as soon as one smokes the hive a little and opens it up they boil all over the combs, but they do shake off the combs easily when one is extracting.

In the East he found that the little black was a very good bee to cap its honey white, as it always left a little space under the caps, while the Italians that his neighbors kept filled the honey cells full, thus giving the honey a bad appearance.

Reading up some of the best books on the bee, he finds the Italians are very resistant to the wax moth, that it is impossible for a moth to make a start, even in a little three-frame nucleus; while well he remembers how the moth used to kill whole colonies of his little blacks.

From Father Longstroth's book he finds that there were two attempts made to bring the Italians over. The first one failed, but the last was a success, about the year 1859.

Father Longstroth invented the movable comb hive and did much to breed up the Italians.

For several years queen bees sold for twenty dollars each from Father Longstroth's Queen Rearing Yards. Making up his mind that the Italian bee was the bee for him he ordered a few Italian tested queens from his nearest breeder and in a few months he has the pleasure of seeing the young bees begin to take their daily play spell in front of the hive.

By close observation he noticed how much more industrious these Italians were than the blacks. The little blacks seemed to want to do a whole lot of swarming, while with the Italians, they seemed to care for nothing but to gather honey.

During the spring he often had to take a look into the hives of the Italians, and how gentle they were. They hardly wanted to sting, and the queens just seemed to stay right on the combs when taken out of the hives.

During the year there was a touch of European Foul Brood spread over the country and about half of his bees died. He reads in his bee books that if he will requeen with Italian stock they will resist the disease. So he at once requeens all his hives from his Italian stock, but he has a lot of hybrid queens crossed with drones from the hives of the little blacks. So he studies up on queen rearing and finds that by hand picking the drones and putting plenty of drone comb in his Italian stocks they can produce plenty of drones for mating.

All these ideas he carries out and the following year he finds in requeening that 90 per cent. of his queens are pure Italians. About the only fault he could find with the pure Italians was that they were far worse for robbing a hive when it got a little weak, but he soon remedied this by the methods named in the bee books.

BEEES ARE COLOR BLIND

Learn Their Way By Experience and Not by Instinct

Bees are color-blind and they learn their way about by experience rather than by instinct, according to tests recently conducted by scientists. The experts show that to these honey-making insects, red and black look alike, orange and yellow are the same as green, and there is no difference in the appearance of blue, violet and purple. However, they can see ultra-violet rays, which are invisible to the human eye. It was found that the guiding influence which takes them back home is nothing more than experience. It has been long known that the bees locate hives quicker, the longer they have occupied them. During the experiments, some were put to sleep by either, taken from a new hive and moved 12 yards away. On the third day 30 per cent. returned and says the "Grande Prairie Herald" 90 per cent. reached home on the eighth day.

QUESTIONS AND ANSWERS

EXTRACTING WITHOUT AN EXTRACTOR

W. L., Amisk, Q. 1—What is the system of extracting honey where no extractor is kept; does the comb have to be taken out and the whole thing melted?

A. 1—It is pretty hard to extract honey without the proper machinery. It might be squeezed from the combs which mixes the pollen with the honey, making it dark in color and bitter in flavor or it might be heated, which spoils the flavor and color. If the combs are new, it may be cut out and eaten as comb honey. If you have a neighbor who has an extractor you might be able to get him to do your extracting.

DARK COMBS

Q. 2.—I have some combs that are very dark in color. Should these be used again or a new foundation put in?

A. 2—Dark combs can be used again and again for many years. It is not necessary to replace them with new ones.

TRANSFERRING TO A NEW HIVE

F. M. P., Amaranth, Man., Q.—What is the best way to transfer a colony of bees from an old fashioned Polish hive to a new Langstroth hive?

A.—It is generally an easy matter to transfer bees from a Polish hive to a Langstroth as the frames are about the same dimensions if properly made. The frames in a Polish hive stand on end. These may be removed and the bees shaken from them, and a narrow strip of lath of the same length as a top bar nailed on the side. When two or three of these are so arranged and placed in the Langstroth hive the bees can be shaken on them.

Care should be taken that the combs containing brood are not exposed to the sun or wind longer than is necessary. This method of transferring is a rough job at the best, but easier accomplished than transferring from a box hive where the bees have built their own combs. The combs should be placed in the same order in which they were taken from the other hive.

COMB HONEY

J. N., Kelliher, Sask., Q.—I am intending to go in for comb honey this year and for 100 sections how much foundation will I need for the sections which are 4x5x1 1/2? Also how much foundation and what kind will be needed for 1 ten-frame standard shallow super? Will it need to be wired? In the long run which pays best, comb honey or extracted honey?

A.—Special thin foundation for section boxes as sold by dealers in beekeepers' supplies is what you want. A ten-frame standard shallow super holds 32 sections. Enough to fill 3 supers will make 96 sections. Instead of wiring for support, you fasten the sections together in section holders which you buy for the purpose. The cost is not very much.

In order to make the best profits from comb honey, you should be careful to have the product as nearly perfect as possible. It is a fancy commodity that brings a fancy price, but customers always want it clean, and free from propolis and with all the cells (except just around the edge) well filled and capped over.

3 BANDED FOR QUALITY

OHIO VALLEY QUEENS

GOLDENS FOR SERVICE

Read what one of our customers says of our queens:

I have one of your queens that last year made eight supers, 256 sections full of honey, and her bees did not build any queen cells. I have several more queens that done well.

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Select Untested—1 to 12	1.25 Each
Select Tested	1.75 Each
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2-lb. package with queen, prepaid	5.25 Each

FRAMES

We have just taken the sale of the Russell patent frame. Being standard in size, self-spacing and fits all standard hives. We are sure you will like them and offer you the frame at these special prices: 25 for \$2.00; 50 for \$3.25; 100 for \$5.75.

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Keeping Bees Free from Disease in Alberta

Four tons of honey, according to W. H. Fairfield of the Lethbridge Experimental Farm, were produced last season by the honey-bees of the Lethbridge district. "On the experimental farm," said Mr. Fairfield, "we averaged 200 pounds a week from our bees."

Mr. Fairfield is a well-known authority on agriculture and bees. He has imported bees from the states in parcels and has had very good results from all his extensive workings with the bee industry. Mr. Fairfield feels confident that in a few years the province of Alberta will be exporting honey to the eastern provinces. "Everything is in favor of the Alberta producer," says Mr. Fairfield, "when they do start in the bee industry."

Last summer at the experimental farm they had produced from all the colonies an average of 200 pounds of honey a week, which retailed at 20 cents a pound. The best hives yielded 400 pounds of extracted honey. These bees worked like factory hands, starting after seven o'clock. They were weighed, hive, bees, honey and all, each morning at seven before the starting whistle blew. Thus an accurate account of their work could be made in the experimental farm records. It was found that some of these hives gained as much as 22 pounds in one day when the bees were busy in the nearby fields of alfalfa bloom. All told, about four tons of honey were produced in the Lethbridge district last year.

Imported Bees

Mr. Fairfield said that he had imported four parcels of bees from Texas, Louisiana, Tennessee and California. He found it easy to train them to fly west in the morning when starting work so as to have the advantage of the strong westerly chinook wind when coming home loaded with honey at night. When the irrigation farmers near Macleod started raising alfalfa, his bees would fly across the deep cut valley.

He explained that the purpose of the provincial legislation against the disease of foul brood was on account of Alberta being remarkably free from this disease while it is quite common in both Manitoba and British Columbia, and that the reason of the Dominion order-in-council was to protect Canada from the importation of the disease from the United States, where it was also said to be quite common. He declared that there is not a known case of foul brood in Alberta.

Explaining the nature of foul brood, Mr. Fairfield said: "The larvae of the unhatched bees die of disease in the cells and this causes a disagreeable odor which causes the name of foul brood. This disease is contagious but it can be eradicated by removing the bees to a clean hive and the destruction of the infected comb and the disinfection of the hives."

Developing Queens

"A worker is an undeveloped female," continued the expert: "the beekeeper can take an egg that a queen bee lays in a worker bee cell and remove it to a royal cell padded with royal jelly. Then the workers of the swarm feed the little Cindarella of the insect world in the royal palace until she emerges a full-fledged queen, to be sold like a slave by her human owner for from one to two dollars."

"The king daddy of the royal family is a heroic drone who sacrifices his life when he fathers a royal family. He spends his honeymoon on the wing and then dies a victim. The queen then has the ability to lay either a fertilized or an unfertilized egg. The unfertilized egg produces a drone and the fertilized egg produces a female which can by the art of the beekeeper and the co-operation of the worker bees of the hive be transformed into a queen. In the ordinary course of events all queens are developed, but one only is allowed to live. A dual sovereignty is not tolerated."

"Thus money can be made by the human keepers either out of the honey or out of the sale of either queens or swarms of bees. Queens of purebred ancestry are worth more just as are the sires of aristocratic lineage in the live stock world."

New Regulations

Here are some of the regulations enacted by the new Alberta Bee bill:

Every beekeeper must notify the minister of agriculture within a month that he keeps bees. Whenever an inspector finds that a foul brood of virulent or malignant type exists in any colony of bees, he shall immediately order the destruction by fire of such colony and the hive occupied by it, the contents and all appurtenances which cannot be disinfected. When any infectious or contagious disease is suspected the colony or the apiary may be quarantined by the inspector. All bees imported into Alberta are declared to

be in quarantine upon the premises of their owner, who must notify the department within three days of the receipt of the bees by him. The inspector may order the removal of the bees and in the event of their not being removed he may order their destruction. Every person who suspects the presence of foul brood in his own or other apiary shall immediately report his suspicions to the department.

Any person contravening, neglecting or hindering the enforcement of this act shall upon conviction be liable to a fine of from \$20 to \$100 with costs or imprisonment for a period of from ten to thirty days.

Henceforth as both bees and inspectors become more numerous in Alberta, it is quite likely that Alberta people will become more familiar with bees. It would appear that there is a wealth of honey now going to waste all over Alberta that through the increase in the number of beekeepers could be turned into honey and add a very pleasing dainty to the home table, as well as bring to Albertans much ready cash. A future beekeepers' convention may become a feature of Edmonton's annual agenda of conventions.

Method of Placing Supers

Observations here show that, in adding supers, it is advisable to place them next the brood chamber, putting partly filled ones on top, as when the supers are placed on top of full ones the bees are inclined to loaf in front of the hive. Care should be exercised in adding supers, especially if only foundation is used, to see that there are sufficient young bees or emerging brood in the hive so as to have enough young bees to draw out the comb. Otherwise the old or field bees will have to do the work and thus curtail production at a time when the honey flow is at its height.—Report of Experimental Farm, Agassiz, B.C.



Russian Hives with Thatched Roofs—Apiary of John Zdobovsny, Ladywood, Manitoba

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Largest Exclusive Manufacturers of Beekeepers' Supplies in Canada.

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Division of Labor in the Hive

FRANK A. SMITH, M.D.

During the last few days in May and the rest of the summer the bee colony shows every sign of concentrated and specialized activity. It is all an effort to carry on the species with each generation making some infinitesimal improvement. Each bee in the hive has its own work to do. Each hive contains from 25,000 to 40,000 bees with one queen mother, and yet there is no confusion.

We find some bees told off to act as retinue to the queen and to feed her with honey which they have already partly digested. The queen moves constantly over the comb, laying an egg in each cell which has been prepared and polished for its reception. This egg is plainly visible to the eye and a peculiar feature of this part of the mark is that the queen, although she is a light feeder, lays almost 10 times her own weight (some 3,000 eggs) in proteid each day. She can at will lay either worker or drone eggs—the drone egg is a non-fertilized egg.

Small armies of workers are clustered, forming wax and moulding the cells. The wax exudes from the abdomen of the worker as a white material which is mixed with, possibly, saliva, and moulded to the shape that we find it. Great quantities of honey are eaten by this corps. It is estimated that it takes 25 pounds of honey to make 1 pound of wax. The shape of the cell is another wonderful thing, it is six sided, and is exactly the shape mathematicians have estimated to be necessary to achieve the greatest containing space with the least material. This shape never varies.

On the running board of the hive, just at the entrance, on a hot day, will be seen many bees, apparently standing on their heads and fanning their wings vigorously. These are the ventilation crops and they are forcing fresh air into the hive. Every moment or so bees will be seen alighting on the running board and entering the hive rapidly. Some will waddle in with the thigh pouches filled with pollen, showing by the color the flower from which it came. Others are loaded with honey or water which is very necessary to the hive. It is estimated that a visit to a flower takes seven or eight minutes. The honey is really lapped up by the proboscis of the worker and carried in what we might call the first stomach. There it is mixed with a tiny amount of a chemical substance which causes it to undergo a chemical change when it is placed in the cell; this is what we mean when we speak of ripening.

After a few hot days it is well to open the hive and check over the contents. The cover is pried up slowly, a whiff of smoke is blown through the crack of the frames and a little into the entrance, then the bees can be handled with safety. The frames are carefully pried up one by one and examined. First locate the queen, then estimate the number of frames of brood. Be sure to replace frames in original position. A practical lesson by an expert beekeeper would be very desirable here.

At this time your supplies needed would be a spare empty hive for each colony, one super with frames and foundation, a bee veil, a smoker, a hive tool and possibly gloves. The cheap painter's glove is very good. The foundation I prefer is the kind which already contains wire. These can all be purchased from a supply dealer.

Just a word to explain the terms used in the last paragraph.

The hive explains itself and should be prepared with full sheets of drawn comb or frames of foundation. The foundation is a sheet of wax which hangs in the wooden frame, and on which the bees build their cells of wax; it is not used in the old fashioned hives.

Smoker—A very necessary article and a very handy material to use in it is old sacking. Do not use more smoke than is necessary. Try to choose a warm still day to open the hives and do all the work slowly and without the slightest jarring. The cover and frames are usually glued together by propolis, which is gum obtained from poplar and which bees use to seal up all cracks.

The action of the smoke is explained by the fact that bees have a peculiar fear of it and immediately fill themselves with honey, apparently determined to save as much of the hive as possible. Once full of honey they are unable to curve the abdomen in the proper manner to insert the sting. They do this also before swarming and that is the reason one has no difficulty in handling a swarm. The workers all possess stings, but do not use them unless alarmed, for the bee soon perishes after the sting is used. The queen has a very wicked sting, but will never use it on anything except another queen, and her anger in this regard is very remarkable. After some weeks of practice and experience the bees can often be handled without the use of a smoker, gloves or veil.

The next article will appear in swarming time and this subject will be taken up.

DON'T GET STUNG

Beekeepers, when working amongst their hives, should wear light colored clothes if they wish to avoid stings. Bees have a decided objection to anything black, especially if it is rough or fuzzy.

To reduce the effect of a bee-sting, it should be removed at once by scraping it away with the fingernail or rubbing it off on the clothes, and on no account should it be picked off with the finger tips, as that cannot be done without pressing the poison bag and injecting the whole of its contents into the sting.

Avoid working amongst the bees with strange odours on the hands or clothes. This will often cause bees to sting. They dislike such things as camphor, kerosene, turpentine, carbolic, and eucalyptus oil.

Avoid standing in the line of flight of the bees leaving and returning to the hive. This also causes them annoyance.

But even bee stings have their uses, and of late years medical men have been using them for the cure of certain forms of rheumatism.—B.C. United Farmer.

METHODS OF PREVENTING BEES SWARMING

In the report of the Bee Division of the Experimental Farms for 1923, the Dominion Apiarist, Mr. C. B. Gooderham, states that work on the prevention and control of natural swarming was continued under two heads: (1) management and (2) breeding. The fact that only three natural swarms, which were expected and allowed, issued from any of the colonies is taken as indicating that the continued breeding from colonies that do not make any preparations for swarming is tending towards the reduction of the desire for swarming, and also that the methods adopted by the Division for treating colonies that make preparations for swarming are successful.

Description given in the report of the methods followed for the prevention of swarming by management includes the separation of brood and queen, a modification of this method and dequeening and requeening. Under the heading of "Best Methods," the report says: "Four other colonies had their queen removed and queen cells destroyed as in dequeening and requeening, but instead of giving a ripe cell at the time of removing the queen, the colonies were left queenless for nine days, when all the queen cells were again destroyed and a young laying queen was introduced. This method of first removing the queen and destroying all queen cells, and after a period of nine or ten days, again destroying all queens cells, and giving a young laying queen, appears to be the most satisfactory, for no colony treated by this method during the past three years has made any further attempt at swarming."

Other matters of vital import to beekeepers are dealt with in the report, which may be obtained on request by addressing the Publications Branch, Department of Agriculture, Ottawa.

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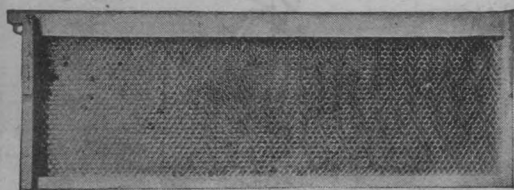
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	To March 15th	Mar. 15th to Apr. 30th	May 1st or later
1	10 or more	1	10 or more
Untested Queen	1.75	1.50	1.25
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BREEDING QUEENS IN ONE FRAME NUCLEUS \$10.00 TO \$25.00			
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1 Frame each	2.00	1.75	1.50
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1 lb.	2.00	2.00	1.75
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Add price of Queens you order to above prices on Nuclei and Package Bees

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FULL COLONIES OF BEES on Hoffman wired frames in brand new hive bodies with **TESTED** Leather Colored Queen in each hive at \$15.75 each in 10 frame Simplicity Hive Body or \$14.75 each in 9 frame Model Hive Body. If you wish for hives painted two coats white lead paint and including cover and bottom add \$2.00 extra per colony. On order for 5 colonies or more less 5% discount.

For shipment commencing June 15th, Full Colonies in 10 frame Simplicity Hives, same description as above, \$12.50 each, 9 frame Model Hives, \$11.50 each, plus \$2.00 when painted with cover and bottom included and less 5% on order for 5 or more.

THREE FRAME NUCLEI, including Untested Leather Colored Queen and three Hoffman combs filled with brood and bees at \$6.50 each, less 5% for 11 or more.

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THE SUPPLY OF COMBS

A good stock of drawn combs is the most valuable asset that a beekeeper can have, especially if one is a producer of extracted honey. They are of particular value in a season when the honey crop is light, because they enable the bees to store what little nectar is available instead of using it for the building of new comb. Every beekeeper should endeavor to have a number of new combs drawn during a good season to replace any that may become damaged or broken.

A good comb is one that is straight and containing as few drone cells as possible. It must also be firmly attached to the frame on all four sides and strongly supported in the frame by means of wire. To produce such combs, the frames must first be tightly wired; No. 28 tinned wire is most commonly used. Full depth Langstroth frames should have at least four horizontal wires, larger frames will need more. It is important that a full sheet of foundation be used for every frame; this must be fastened to the top bars and the wires firmly embedded into the wax by means of an electric or spur wire embedder. The foundation may require trimming, as it must not touch the end or bottom bars of the frame by at least one-eighth of an inch or it will buckle after giving it to the bees. Foundation well fastened in the frame will not melt down or sag and the finished comb will not have distorted cells and will not break in the extractor if carefully handled. Bees will not work on foundation unless there is a plentiful supply of nectar coming in, therefore, it should only be given during a good flow. To get the combs well attached to the frames, the foundation should be drawn out in extracting supers, as bees seldom attached the combs to the bottom bars in a brood chamber.

When extracting the honey from new combs, first take only part of the honey from one side, reverse the comb and empty the other side, again turn the comb and finish the extracting; this will prevent breakage. If all the honey is extracted from one side without removing any from the other, the weight of honey on the inner surface of the comb will crack or even break out the whole centre.—C. B. Gooderham, Dominion Apiarist.

WORKS DURING VACATION

"Really, now, there is much to admire about a mosquito. He works cheerfully during the vacation season. He sings away as he works, treating the rich and the poor alike, and overcoming all barriers that may be placed in his way. Such a one always makes his mark, and is remembered long after he is gone.

"We admire a mosquito for his industry and his cheerfulness and for his persistency—but we don't like the job he works at."—Exchange.

THE CROW'S EATING CAPACITY

"It is estimated that a crow needs at least half a pound of meat per day, but it is evident that for weeks and months during winter and spring they must subsist on a mere fraction of this amount,"—page 222, "Wake Robin," by John Burroughs, the naturalist.

PRACTICAL NOTES ABOUT HUTZELMAN'S SOLUTION

The treatment of something over one hundred and fifty combs with Hutzelman's solution, during the past six weeks, has enabled us to make a few observations on the nature and use of the alcohol-formalin solution.

The regular dipping tank made by Dr. Hutzelman to hold ten combs was used. We found that about eleven gallons of solution was required to completely immerse ten full drawn combs. As the combs are being placed in the solution it is well to jiggle them from side to side to make sure that all cells are filled. The combs were allowed to remain in the liquid at least two days and were then extracted.

In spite of the fact that all windows in the extracting room were open during the extracting the gas thrown off by the extractor was almost unendurable, so a wooden cover was fitted over the extractor in such a way as to retain at least a part of the fumes. Of course, if this work were done in the open air the operator would probably suffer less. But in a closed room a gas mask would certainly not be out of place.

Rubber gloves are indispensable for handling the frames after they have been in the solution. They should be a little large for convenience. We do not advise shaking the solution out of the combs before extracting, because the operator gets more of the gas this way, and furthermore the extractor throws out the solution quickly and efficiently.

It seems very easy to overlook an occasional cell of sealed honey in the combs and we suggest that all who use the solution should be very particular in this regard. Furthermore, unless all honey in the combs, and pollen, too, for that matter, is well soaked and extracted before immersing in the Hutzelman's solution, the solution soon becomes quite dense and does not seem to enter the cells in the comb as readily. If the solution is used after considerable pollen-bound combs have been treated, the treated combs after drying will show a layer of dry pollen in the cells. This is probably not an objection of importance since the bees clean the cells anyhow before use.

The first combs treated have now been stacked in supers about six weeks, in a room with ordinary ventilation but a little warmer than usual if anything, and by this time no trace of the formalin odor remains. In fact, the combs are very clean after treatment.

After treating the one hundred and fifty combs the volume of the solution had shrunk about one and one-half gallons.

We have not yet had an opportunity to test the treatment by allowing use of the combs for brood-rearing, and consequently can say nothing of the effectiveness of the solution from our own experience. However, this data will be available shortly.—Russel H. Kelly, in "The Beekeepers' Review," Michigan.

June and July

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Mr. Beekeeper you will soon be putting supers on your colonies. Why not use the BEST this season at no extra cost. Our split bottom bar self-spacing Hoffman frames together with Dadants wired foundation, not only saves time and labor, but produces the most perfect combs possible. Dovetailed and Dadoed cornered bodies at the same price. Anticipate your requirements and place order NOW.

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A SOLID CAR OF LIVE BEES BROUGHT INTO MANITOBA

The big demand in Manitoba this spring was the occasion for the first carload shipment of bees from the south. Many shipments of packages have been made to this country from the south in recent years, but never before has there been any single shipment as large as the one consigned to R. J. Smith, Winnipeg, from J. E. Marchant, South Carolina. A special express car was procured to hold the thousand 2-pound packages of bees with queens that were wanted to fill a part of Mr. Smith's orders for this season. About a thousand more were coming to Mr. Smith at the rate of one hundred with each train.

The packages were all set in long rows from one end of the car to the other, fastened in place to keep them steady throughout their long journey, from Conway, South Carolina, to Winnipeg, Manitoba, a distance of over 2,000 miles. In the top of each package was a tin feeder, and it was a fairly big chore to take out all these feeders and refill them with syrup when the car was side-tracked at Winnipeg.

Shipping nuclei would be an easier proposition than shipping packages, as the bees would feel more at home on combs than in the bare surroundings of wood and wire which the law allows. The carload arrived, however, in good shape, with a smaller percentage of dead bees than one would expect to find in any packages shipped such a long way.

The importation of bees on combs from the United States is now against the law, but the number of bees being imported in packages this year shows that it is still possible for southern beekeepers to do a big business in supplying Canada with some of the new stock required every year for honey production.

Many of the packages were being reshipped on small orders to the country as soon as they could be transferred to the local trains. Some were being taken right from the car by Winnipeg beekeepers. The rest of them were taken to Mr. Smith's apiary, where he had 500 hives ready to put all that were going to customers on delayed orders, or to country points to which the express service could not take them for a day or so.

The arrival of these millions of immigrants by the Northern Pacific Railway train No. 13 on Wednesday night, May 14th, was an event in the beekeeping industry. On Thursday the sun shone brightly and the weather was fairly warm, although for most of the preceding week it had been rather cool. In the work of feeding and unloading, a couple of packages were broken; so the air was filled with bees all round the car, inside and out, during the afternoon; but they were well behaved bees and were economical with their stings.

Adding by the carload to the amount of bees in Western Canada should mean adding to the honey production by several carloads.

ALUMINUM COMBS

The results obtained from the use of metal combs in the brood chamber confirm the results obtained during the previous three years, namely, that the bees do not take to them readily, and even when the colony contained a young prolific queen, brood rearing was restricted, says the Dominion apiarist in the annual report of the Bee Division for 1923. The colony on these combs did not winter well, and at no time during the season did the bees cover more than 11 frames, nor have more than 5 frames of brood. The honey production was also 73 pounds lower than the average of the whole apiary.

BUZZING BROADCAST

Two bees are to be mounted and kept as a memento of the first wireless message ever sent out by bees, says an old country paper.

The story of the experiment is told in the Bee World for October. Mr. R. E. Richardson, chairman of Newcastle and District Beekeepers' Association, giving a broadcast at the Newcastle-on-Tyne station on bee-keeping, told the listeners-in that for the first time they should hear the buzz of the honey-bee through the ether.

A bee was placed on the wire gauze of the microphone and immediately set up the fanning operation. It was then reinforced by a chorus of captive bees. The sound was heard as far away as

the Shetland Isles (about 350 miles away).

Then Mr. Richardson gave his interpretation of the bees' protest, as follows:

Unhand us, you rough biped. If you had brains in proportion to your bulk you would not let tons of ungathered honey waste on the countryside while millions of willing workers only asked house-room to gather it for you. But you cannot solve the problem of housing men, so no wonder hives and bees are beyond you. Take advice from us, sir, make things hum and don't leave foreigners and colonies to send you the most delicious and perfect food Nature has provided. Come, get a move on, and let me buzz off.

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Glenwood, Michigan, U. S. A.

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DAMAGE BEING DONE TO POULTRY BY CROWS

E. R. GALVIN

Sporting Powder Division,
E. I. du Pont de Nemours & Co.,
Wilmington, Del.

While nothing is added to the poultryman's fund of knowledge by the statement that the crow is a chicken thief, how conclusively the case against "Jim Crow" has been built up is certain to be of interest to all engaged in the poultry industry.

Recently under instructions from Seth E. Gordon, executive secretary of the Pennsylvania Board of Game Commissioners, 43 game wardens submitted reports of their observations of the destruction wrought by the "garden variety" of black crow.

Mr. Gordon summarizes the results of the state-wide investigation in the following language: "Our agents throughout Pennsylvania report the common crow very destructive to the eggs and the young of game and useful birds. Adult rabbits, liberated for stocking purposes, are frequently killed. It is also a menace to poultry. The crow is considered destructive vermin in Pennsylvania, and officers and sportsmen are making efforts, through special drives, to hold the crow in check."

Thirty-three of the game wardens reported that the common black crow eats chicks and other young poultry, and also the eggs of chickens, turkeys and guineas.

Representative of the findings of the Pennsylvania game wardens are quotations from their reports, as follow: "Many farmers report thefts of chickens by crows." "Mr. Guy A. Leader told me crows in 1922 carried away 125 young chicks, but he has lost chicks at many other times." "Crows fly in our chicken yard and pick up young chicks." "The crow has a great appetite for poultry." "I have seen the crow rob nests of barnyard hens and carry off young chicks." "In the spring crows in this country carry away young chicks by the hundreds." "If crows find a chicken or turkey nest they watch it every day and take the eggs." "A couple of years ago a family near me reported that crows took eggs from nests of ducks every day." "I have seen crows dart down and take whole flocks of chicks in a very short time." "I personally know that one spring afternoon the crows carried off about seventy-five of a farmer's young chicks."

That, as is generally known, raids on poultry are not a habit peculiar to crows found in Pennsylvania, received confirmation in reports from game protectors in ten commonwealths, beside the Keystone State.

Of statements made by game commissioners or game wardens of 43

states; 38 favored the control of crows. They are: Alabama, Indiana, Kansas, Kentucky, North Dakota, Ohio, Oklahoma, South Carolina, Virginia, North Carolina and Pennsylvania.

The weight of evidence of poultrymen in this field is that the crow is harmful to game, poultry and crops.

BUCKEYE PATENTS UPHELD IN COURT

The Buckeye Incubator Company obtained a decision in the United States District Court against D. A. Wolf, of Gibsonburg, Ohio, for the infringement of its Mammoth Incubator patents. Mr. Wolf then appealed the case, but in the higher court the decision against him was maintained.

After having operated two No. 7 Buckeye incubators since 1913, the defendant began in 1920 to build incubators for himself of the same type. As constructed and operated, these machines were duplicates of the improved type No. 7.

The five patent claims covering the construction and method of incubation that the Buckeye Co. uses, were declared valid by the court, so that any incubator that embodies any one of the claims will be an infringement.

1. The method of hatching a plurality of eggs by arranging them at different levels in a closed chamber having restricted openings of sufficient capacity for the escape of foul air without undue loss of moisture and applying a current of heated air, said current being created by means other than variations of temperature and of sufficient velocity to circulate, diffuse and maintain the air throughout the chamber at substantially the same temperature, whereby the air will be vitalized, the moisture conserved and the units of heat will be carried from the eggs in the more advanced stage of incubation to those in a less advanced stage for the purpose specified.

2. The method of hatching a plurality of eggs by arranging them at different levels in a closed chamber having restricted openings of sufficient capacity for the escape of foul air without undue loss of moisture and applying a power-driven current of heated air in an adjacent chamber through openings into the egg chamber, said current being of sufficient velocity to circulate, diffuse and maintain the air throughout the egg chamber at substantially the same temperature, whereby the air will be vitalized, the moisture conserved and the units of heat will be carried from the eggs

in the more advanced stage of incubation to those in a less advanced stage for the purpose specified.

3. The method of hatching a plurality of eggs by arranging them at different levels in a closed chamber having restricted openings of sufficient capacity for the escape of foul air without undue loss of moisture and applying a vertically directed current of heated air in an adjacent chamber to circulate in said egg chamber through upper and lower openings between said chambers, said current being created by mechanically moving means of such velocity as to diffuse and maintain the air throughout the egg chamber at substantially the same temperature whereby the air will be vitalized, the moisture conserved and the units of heat will be carried from the eggs in the more advanced stage of incubation to those in the less advanced stage for the purpose specified.

4. In an incubator, a closed chamber having a central corridor provided with an air-distributing space in its upper portion and a power-driven fan in said space, curtains at each side of said corridor, arranged to permit the air to circulate from the bottom of the chamber into the part of the chamber behind the curtains, passageways connecting the air-distributing space with the corridor and the parts of said chamber behind the curtains, separate stationary and tilting racks behind said curtains, egg-trays having open-mesh bottoms removably mounted upon said racks, and means to heat the air circulated through said chamber.

5. In an incubator, a closed chamber with a vertically disposed partition to provide a corridor having upper and lower passageways to said chamber, egg-trays arranged at different levels in said chamber, a power-driven fan creating a current in said corridor to circulate through said passageways and egg-trays, said chamber having restricted openings of sufficient capacity for the discharge of foul air without undue loss of moisture and means to heat the air circulated through said chamber.

A Paying Sideline on Broadacres Farm

R. A. MEEKS

Situated about 60 miles northeast of Calgary, and near the town of Rockyford is Broadacres Farm, owned and operated by Miller & Clemons. It is operated as a grain and mixed farm, poultry being one of the profitable sidelines. In a recent letter from Mrs. Miller she outlines her methods and system followed. Mrs. Miller is a real poultry enthusiast and is a booster for the Rhode Island Reds. She describes the Rhode Island Reds as splendid dual purpose birds, and as birds that are hustlers and respond quickly to good care.

The buildings include one house, a large glass front building 20x40 feet, in which the older birds are kept, (in winter, all the hens) equipped with self-feeders, roosts with dropping boards and a heavy curtain to let down on cold nights, also muslin covered window spaces for ventilation. This house is equipped with electric lights which helps to increase the winter egg production. The other building is smaller, 10 ft. x 28ft., has windows half way across the front and one muslin window at the back, used as a brooder house in spring. The building is equipped with a 500-chick size brooder to warm the baby chicks until they are 3 or 4 weeks old. Later the stove and brooder are removed and low roosts put in. The young birds roost here until the cold weather comes, when the pullets are removed to the larger house, leaving the cockerels in the brooder house until they are fattened and marketed or sold for breeding purposes.

The feed used for the poultry is mostly grain raised on the farm, wheat and oats as whole grain fed in litter, also chopped grains for a dry mash in self-feeders. They get all the skim-milk available—sweet and sour. This is considered a very important article of their diet, and is before them all the time. Meat scraps left from butchering, or some old cow or horse, is fed them in the winter. Charcoal, grit and oyster shell in hoppers are before them all the time. Vegetables furnish the green food, and beets seem to be their favorite. Ensilage has been fed to the poultry with good results. They also get a small amount of table scraps. The flock is kept free from lice during the winter by providing a large box of sifted ashes.

From 200 to 250 hens are kept the year around. This means keeping 20 to 25 cockerels during the breeding season. New stock is introduced every year through the cockerels and by getting eggs from as good a strain as can be had, always sticking to the one breed. Mrs. Miller believes in purchasing hatching eggs to introduce new blood. She aims to improve her stock in size, color and egg production. No bird over two years' old is kept.

They use a 600 egg Buckeye machine and she advises anyone trying to raise a few chickens to get one, as the care is nothing compared to the trouble with setting hens. One setting of the 600-egg incubator averages from 400 to 450 chickens. The incubator is set three times, the first hatch coming off the first week in April, and the two

later hatches are sold at 25c and 20c per chicken.

The houses are cleaned thoroughly once a week and fresh straw put on the floor. The hens must work for their living, also the chickens. When snow is on the ground and the weather is cold the chickens are kept inside, but whenever possible they are given the run of the farm.

As to their marketing system, they aim to have a "succession of crops," or something to sell right along. In the spring, as soon as the breeding season is over, all the cockerels are sold, then early in June the two-year-old hens; a little later, when weighing about 2 pounds, some of the young birds are marketed as broilers, saving some choice ones to sell as breeders at \$2 to \$2.50 each. In the fall successive bunches of young cockerels are finished and marketed, the last bringing a good price for the Christmas trade. Undesirable individuals among the hens and pullets are culled out from time to

always take a load of eggs and poultry and usually obtain the highest market price.

Mrs. Miller finds custom hatching profitable, but finds that day-old chicks sell the best.

Mrs. Miller is not a professional poultry raiser or chicken fancier, but has built up a good flock of government-tested R. I. Reds that pays her well. A record is kept of eggs gathered each day, and of the income derived from the sale of poultry and eggs. The income varies from over \$100 in March and April to around \$15 and \$20 in August. August is the lowest month, as the hens moult in August and more eggs are used at home to feed the harvesters and threshing crews. Electric lights are used in winter and help to swell the egg yield. Her chickens, old and young, are made to earn a living by exercise and scratching.

Summing up, will say that Mrs. Miller's success with poultry is due to good purebred stock; roomy, warm,



Brooder House on Broadacres Farm

time. Fresh eggs are sold throughout the winter, as the early pullets begin laying early in the fall. Pullets hatched April 3rd began laying in September. In the spring the fertile eggs not set at home find a market locally as hatching eggs at from 75c to \$1.50, depending on whether from range flock or special pens. During June and July when eggs are cheap, they pack eggs for home use to tide over the harvesting demands and the scarcity during moulting. Mrs. Miller believes in putting surplus eggs in cold storage. In the spring and early summer, when eggs are very cheap, all those not used at home, or for hatching, are sent to Calgary for cold storage. The one winter that was the exception to the rule was 1921-22, when there was no profit realized from storing. But on an average of years it pays as winter eggs are always scarce, while they are plentiful and cheap in summer.

Mrs. Miller does not try to work up a private list of customers, but when going to Calgary with the truck they

dry, light houses, plenty of a variety of good food, and fresh water and plenty of milk, regular care and last, but not least, cleanliness.

The brooder house was 8 ft. x 28 ft. at the time the photograph was taken, last year. As it has been rebuilt it measures 16 ft. x 28 feet. In winter it is used for cockerels.

The pure-bred Rhode Island Red chicks were hatched April 3rd, and five pullet eggs were laid on Sept. 5th. The pullets laid well all winter, and were still laying on May 17th, though they were slowing down a little.

"We have the pure bred Rhode Island Reds, and we are growing more enthusiastic over them every year," writes Mrs. Miller. "Of course we are by no means chicken fanciers, as our flock is only a sideline on a grain farm; still our chickens have proved so profitable that the men folks have become really interested in them, and are planning a few improvements in our chicken plant each year."

Broodiness

It is unnatural for a hen not to get broody. Some breeds of poultry, however, are less inclined to broodiness than others. It has been to a large extent eliminated from some of the lighter breeds, as for instance the Leghorns, and poultry breeders who use incubators for hatching are glad to encounter as little of it as possible. Sometimes when you want a broody hen to put on a setting of eggs you can't get one by any means of persuasion, and sometimes when you don't want any to set, every hen in the flock, more or less, gets broody.

A certain amateur poultryman was bothered this spring by several of his hens getting broody when he did not want to set any eggs, and the eggs that his hens insisted on covering would never produce any chicks anyway, because there wasn't a rooster in the flock. He put the culprits in a pen in the basement of the house to cure them, but in vain, and he even hung them in sacks on the clothes line, but still they went back to their nests. In exasperation he decided to buy some hatching eggs and he built a special coop for setting them out in the yard. Then he put the broody hens into it, and they were all so pleased with it that they would not stay quietly on the nests there, but went back to their old ways of looking constantly for something to eat and a place to roost.

In the average chicken yard there is trouble with hens on account of broodiness one way or the other from early in the spring until late in the fall. If you want a hen to set, and none of yours have the instinct for the time being, the best thing to do is to buy or borrow one that has it, and coax her to keep a nest of eggs warm for you. If you are troubled with too many of your hens getting the instinct there are several methods that are more or less effective for curing them.

Remember that in the natural course of events a female bird lays a nest-full of eggs in the spring of the year in some quiet spot, where they are likely to be safe from marauders and from the weather, then she gets broody and sits on her eggs until she hatches her young ones. With chickens the hatching takes about 21 days, and in that time the hen never leaves her nest except for about a half-an-hour a day to get a little exercise and pick up some food. If you don't allow this promiscuous but natural method of reproduction in your yard, you must use in place of it some artificial method or buy all your young stock.

The question is how to cure the hens of their natural instinct when you want them to keep laying eggs. The best way, at least for a busy man, is to have a broody coop where the culprits can be locked up, as in jail, for a period of two or three days, or until they are reformed. The coop should be protected from the hot rays of the sun overhead, but have no dark corners in it, nor any comfortable looking spots for a hen to use for a nest.

An old method of breaking a hen from the bothersome instinct is to put her into a tub containing two or three

inches of water, covering the tub with slats, and leaving the bird there for about 12 hours at a time. She cannot sit down in it without being very uncomfortable, but if she was left there too long she would probably catch cold, for a chicken is not a duck. You take her out of the tub in the evening. Then she rustles for something to eat before it gets too dark, and goes to roost with the rest of the flock. If she tries to locate herself on a nest for the night, you can pick her off and place her on the roost. Next morning if you find her broody again you take her back to the watery jail for another day and keep up the programme daily until she is cured. That means a lot of work, and it is not a very good method.

Some people have a coop made with an elevated floor of slats. There is a free circulation of air under the birds that are put in this kind of a coop which is supposed to make them forget that they ever had a place where they could sit on eggs. Feed is placed in containers on the wall in this coop, and the birds are left there until they appear to be all right again. They do not get much of a chance to exercise themselves in such uncomfortable quarters, but this treatment generally effects a cure in a few days.

In another kind of a pen built for the curing of broody hens, things can be arranged for the feeding and exercise of the birds that are put into it, and a cure effected. All walls except the north one should be of wire or something else that will allow free ventilation and light. The north wall and the roof then should be covered with boards or poles and straw. A drinking fountain is placed inside, where it can be conveniently filled from the outside. The ground is covered with loose straw and the grain that is fed is thrown into this straw, so that the birds will have to scratch vigorously to get it. As they are away from all the laying hens they will have no eggs to cuddle over, and the exercise derived from scratching for feed and jumping at the wire walls, in vain attempts to regain freedom, will generally break a bird of the broody instinct in about three days.

If the weather is very wet this open-air coop will not be so comfortable as it might be, but in the dry weather which is most common during the summer months in the prairie districts, there is no danger of injuring the health of the birds confined in the broody pen, and where many birds have to be treated in the course of the season, the labor saved by the efficiency of the arrangement is worth considering.

Result of Culling

One county in South Dakota now believes in poultry culling. Two hundred and thirty hens were culled from the flocks as poor layers. These hens laid 183 eggs in 15 days. The 772 hens retained in the flocks laid 4,707 eggs in the same period.

QUESTIONS and ANSWERS

The Editor kindly invites all readers of the WESTERN POULTRYMAN to write for advice in matters pertaining to poultry. This will be given most willingly through these pages. All questions received not later than the 15th of the month will be answered in the following issue.

Address all enquiries to The Editor, THE WESTERN POULTRYMAN, 171 McDermot Ave., Winnipeg.

CANARY WITH SORE FEET

L.T.M., Melville, Sask., Q.—A canary seems to be all right in every respect except that he cannot stand on his legs. Can you tell me what is the cause and remedy?

A.—A canary which cannot stand on its legs but seems to be otherwise all right probably has corns on his feet. The treatment is to put the bird's feet into water just as warm as your hand can stand it, and hold them there until the water gets cool. Do this in the evening, and after drying the bird's feet put vaseline on them. Repeat every evening until the trouble is cured. A tonic for the bird is recommended to make him stronger and capable of getting well more quickly.

DEAD IN THE SHELL

W.S.R., Virden, Man., Q.—A large number of the eggs in my incubator contained dead chicks, so I had a very poor hatch. What is the cause of the trouble?

A.—To get good hatches it is necessary to have the breeding stock in good condition, taking exercise and eating plenty of green feed. The eggs are fertile, but the germ is not strong enough to live till hatching.

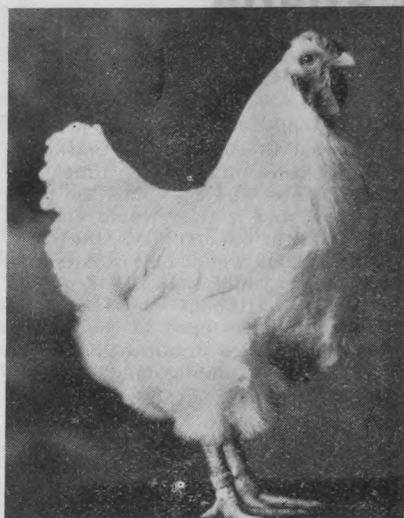
The fault, however, may not be in the condition of the breeding stock, nor in the eggs, but in the amount of heat and moisture that the eggs are kept in. The air in the incubator may not contain enough moisture, or the temperature may be wrong or uneven. Too high a temperature in an incubator commonly prevents eggs from hatching, though if it is extra hot for only a short time it should not do much damage.

HENS EATING EGGS

T. A., Regina, Sask., Q.—Some of my hens have been eating eggs. Would you please tell me how to stop them from this habit?

A.—Maybe your hens eat eggs because they do not get enough of the essential protein material which is contained in eggs, in their feed. You should see that your hens are getting some meat scraps or milk, and some oyster shell or limestone. Maybe the feeding is not at fault. I don't know, as you have not described how you feed your hens. Another precaution that may help is to darken the nests, and keep plenty of good straw in them. If only a few of the hens have this bad habit you may be able to pick them out and kill them for the table.

WHITE WYANDOTTE



Male Bird Owned by Robert Cole, Portage la Prairie. A Prize Winner at Brandon and Other Shows.

RADIO CIRCUIT DESIGNS FOR POULTRYMEN "ET AL."

A new and practical book on radio circuit designs, "Henley's 222 Radio Circuit Designs," has been received. The price of it is \$1.00, from the Norman W. Henley Publishing Co., 2 West 45th Street, New York.

The introduction contains the Morse code and abbreviations, and discussions of some fundamental principles. The meaning of wave length and frequency is explained in the first chapter. Plans and schemes for using the various parts of a radio set are outlined in the book and abundant illustrations are given to make everything clear. The simpler circuits and the more complicated ones are dealt with.

The book explains in simple words the principles of operation of every circuit described, and the functions of all of the component pieces of apparatus. It is a complete work, which should be of use to the expert radio engineer as well as the amateur.

It gives in the back a list of the important broadcasting stations in the United States and Canada, together with their operating wave lengths and frequencies.

DIRTY EGGS

"The poultry producer that sells dirty eggs sets a ball rolling that causes endless trouble right along the line and into the home of the consumer," states W. Waldron, acting markets commissioner in the Saskatchewan Department of Agriculture. "This is more noticeable than ever now that Dominion wide regulations have come into effect which admit nothing but strictly clean eggs among the first four grades of fresh eggs, namely, "Specials," "Extras," "Firsts" and "Pullet Extras." The earlier regulations allowed eggs that were reasonably clean to be admitted into the three last mentioned grades, provided other requirements were met, but no longer can the fresh egg with a dirty face hide

behind the words "Reasonably Clean."

"The producer has the matter largely in his own hands. A dirty hen house means dirty eggs and dirty eggs mean low grades and low prices. At the same time eggs for commercial purposes should never be washed as this helps to destroy their keeping qualities. Hens should be supplied with clean nest boxes—one nest to six hens is sufficient and the hen houses should be thickly littered with short straw. On wet days the hens should be made to scratch amongst the straw for their feed and that will keep them out of the mud.

"An egg," says Mr. Waldron, "is never any better in quality than at the

time it is laid, and the chief cause of deterioration in eggs in storage is dirt on the eggs themselves and on the fillers and flats in which the eggs are packed. A dirty egg quickly develops into a "spot rot" if condition and temperature are at all favorable.

"Of course, eggs broken in transit spoil the appearance of sound eggs in the same case and this may be avoided by shipping eggs sound in shell and properly packing them in standard cases. Transportation companies have now issued special instructions to their employees as to the handling of eggs and cases of eggs are now moved around much like sticks of dynamite would be."

CANADA AND THE WORLD'S POULTRY CONGRESS

Canada was represented by two delegates and a national poultry exhibit at the second World's Poultry Congress, which was held from May 10th to 20th at Barcelona, Spain.

A very striking exhibit was prepared and left by Canadian National Express on Wednesday the 9th instant, for Halifax, from where it was shipped, via London, to Barcelona.

The main part of this exhibit told the story of the Canadian government's work in Registered and Record of Performance birds. The exhibit also contained representative pens of a number of the more popular standard bred varieties.

The birds arrived safely at Liverpool on April 21, and were forwarded to Watford, where they remained for a few days to recover from the effects of the trip before proceeding overland to Spain with the birds from Great Britain. The poultry stood the trip from Halifax to Liverpool in splendid shape, only one bird being slightly indisposed, and all landed in the best of condition.

The treatment given the birds by the officials and staff of the White Star Steamer "Doric" was all that could be desired, every care being taken to make them comfortable. The birds themselves created no little interest among the passengers and crew and were visited by practically all on board. The cockerels were as good as a gong about daylight, and the pullets did not forget to contribute some new laid eggs for breakfast every morning.

Canada is leading the world in its national registration of poultry, and the demand that is being made for these birds was what lead the Department of Agriculture to make the exhibit at this World's Poultry gathering. The birds that were included in the exhibit were collected from various breeders throughout the Dominion. The list of breeders who donated birds for this, are, in the Registered class: Experimental Farm, Ottawa and Agassiz, Barred Rocks and White Leghorns; University of British Columbia, Barred Rocks and White Leghorns. In the R.O.P. class: University of British Columbia, Barred Rocks; T. G. Delamere, Stratford, Ont., White Leghorns; W. N. Hendrick, Hanover, Ont., White Leghorns; Norfolk Specialty Farms, St. Williams, Ont., White Leghorns; J. W. Clark, Cainsville, Ont., Barred Rocks; B. J. Penhall, Port Dover, Ont., White Leghorns. In the Standard bred class:

Hen, J. S. Martin, Port Dover, Ont., White Wyandottes; Agricultural College, Oka, Que., Chantecler; Ferguson & Hunter, Smith Falls, Ont., White Leghorns; The Barred Plymouth Rock Club, Toronto, Barred Rocks, contributed by Dr. J. A. Lambertus, Eganville, Ont.; G. Hall, Trafalgar, and Go-Pe-Haw Poultry, Toronto.

The delegates who represented Canada at the Congress were F. C. Elford, Dominion Poultry Husbandman, and Ernest Rhoades, Live Stock Branch.

Western Canada was heard from at the congress, although not largely represented in the Dominion's exhibit. Premier Bracken, of Manitoba, cabled to the secretary of the World's Poultry Congress an invitation for the 1927 congress to be held in Winnipeg.

It would be a great event for poultry breeders in this country to have the third congress held at Winnipeg, showing what is being done in the poultry industry in all parts of the world. The location of this city, moreover, is highly suitable for a world-wide gathering of this sort, on account of being about half way across the North American continent, easily reached from all parts of the United States, and as convenient for visitors coming across the Pacific as for those coming across the Atlantic Ocean.

DIRTY NESTS

Few of even the oldest poultry keepers realize that a hen can control her output to a considerable extent, and that if the nests are not to her liking she will hide her nest or not lay at all. This is especially true in the off months, when eggs are precious.

Nest conditions particularly objectionable to finicky Mmes. Biddy are filthy ones, lice-infested ones and those that are too public—Oh, yes, Mrs. Hen does not appreciate even the rest of the flock watching her lay. Then, too, if her nest is exposed to paths used by dogs or cows, she will become frightened should these animals pass when she is laying, and may leave the nest and not lay even the egg she was about to discharge, and sometimes laying is in this way checked for many days.

Clean, louse-free, secluded nests, where the air is fresh and cool in summer and warm in winter, offers inviting laying places and while an enticing nest cannot make a hen lay a filthy, repelling one tends toward keeping her from doing so.

The Rabbit Industry in Canada

CHAS. H. DE LURE Crow's Nest Fur Rabbitry, Lethbridge, Alberta

This little animal, the rabbit, sometimes called bunny by the children, has become one of the most popular kinds of stock for meat production as well as fur production. People all over the world have for centuries appreciated its value, and today, with our large and wonderful organizations, the rabbit has found its place amongst the ranks of the world's producers.

In 1908 the agricultural societies of Germany, France, Belgium and Switzerland in a great meeting held in Germany decided to bring up the question of what animal is it in the world, under agricultural conditions, that produces the best advantage from the food it receives? The discussion didn't show any advantage for the large farm livestock, like cattle, pigs, etc., but the delegates agreed by a great majority that the rabbit of pure breed turned out an exact net benefit of 60½ per cent. from its meat value alone, after having been fed entirely with food and forage bought in the stores. It is also understood that besides the wonderful value of the meat, which was recognized as 83 per cent. nutrition, the pelts bring a nice price and, when properly tanned, bring an average for matured stock of \$1.75 to \$3.00 each. This price, then, will pay for the feed of a 6 to 7 months' old rabbit.

With actual agricultural conditions in Canada the Honorable Minister of Agriculture recommends the raising of rabbits as a national industry. Free books on rabbit raising, in the French and English languages, can be obtained on application. The books are very explanatory and are written with the care and knowledge of men who have studied rabbitdom. Of course, for the benefit of the breeders, it is necessary to start with a foundation of good pure-bred stock, but it is not necessary to buy fancy stock, which is only an exaggeration, because fancy stock has a fancy price. The breeder should start with rabbits from which, if he so wishes, he can obtain two different products, the meat and the fur.

After very careful attention and close figuring, the Crow's Nest Fur Rabbitry has shown in the annual report of its breeders and of the firm that rabbits properly handled in a rabbitry without luxury will, after all expenses are paid for hay, milk and grain, bring a net profit of 57 to 58½ per cent.

Of course, we know that many farmers would like to raise rabbits if they only knew where to get a market to sell them. The rabbit alive is in great demand, and so is the meat. If the farmers would take into consideration that rabbits of pure-bred stock bring

to them today 7½ times the price of beef quoted in the Alberta market, 7 times the price of hogs, 4 times the price of lambs, and 2½ times the price of poultry, and if they would start in this wonderful opportunity, the provincial markets would buy rabbits, and the farmers would reap the fruits of their labor. Although the rabbit industry is not developed in the Prairie Provinces, a large organization exists in British Columbia and in the Province of Quebec.

Rabbit is the up-to-date fur worn by all the different classes of people who wear fur under the following names: Northern seal, electric seal, beaverine, moline, kit fox, etc. Those furs, handled by the most skilled tanners and furriers on the continent have always astonished the inhabitants of the country, and under present actual commercial conditions the demand is greater than the output. More than forty different breeds are actually in the country, and amongst them is some fine stock answering all the desire of breeders who wish to improve their financial situation.

(Editor's Note.—This is the first of a series of articles about rabbit breeding written by Chas. H. de Lure for the Western Poultryman.)

Wanted

Responsible party willing to raise Rabbits on contract. We furnish foundation stock at reasonable price and guarantee to buy all you can raise and pay from 50c to 70c per pound delivered alive. Contract black and white. Write to—

CROW'S NEST FUR RABBITRY - Lethbridge, Alta.

Wanted

QUALITY

SILVER FOXES

QUALITY FOXES WILL MAKE YOU MONEY. WE HAVE THE FOUNDATION STOCK. NO BETTER FOXES IN CANADA. PRICES AND TERMS RIGHT.

Government registered stock only. Complete fox service to purchasers.

WESTERN CANADA FOX BREEDERS, 845 SOMERSET BLK., WINNIPEG. BOX 254

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No. 1 Red No. 1 Gray
CRYSTO
No. 1 Lime

Crysto No. 1 Gray or Red, Hard, Sparkling, Clean, just as necessary to the health of your poultry as good, sound, white, pearly teeth are to the human. Insures proper mastication and therefore healthy digestion.

Crysto Lime No. 1 supplies the necessary lime for bonebuilding and general growth of young chicks, also answers the purpose of oyster shells in the laying hen, in the making of egg shell.

Ask Your Poultry Dealer for

Crysto No. 01 Grey for Baby Chicks

Manufactured by

The Western Stone Co., Ltd.
ST. BONIFACE - MAN.

HOW PIGEONS FEED THEIR YOUNG

One of the strangest things in nature and one that is not widely known, is the fact that for the first six to eight days of their lives squabs are fed entirely on milk. Three or four days before the young are hatched, both the mother and father pigeon secrete a milk-like fluid in a gland in their throats provided by nature for that purpose. The squab thrusts his bill into the parent's mouth and receives its nourishment from the milk expressed from its gland. So far as is known, the pigeons and doves are the only birds who feed their young in this manner.

Pigeons lead a very exemplary life in every respect, and to spend several hours on a large pigeon farm and learn something of their habits is like a step into fairyland.

The courtship and domestic life of Mr. and Mrs. Pigeon, for instance, reads like an old-fashioned love story. There is no infidelity there. Pigeons mate for life. If one dies, the other may or may not take another companion, but as long as both live, they stick together.

When the mother is sitting on the eggs, promptly at ten o'clock every day the father bird comes to take his turn. And so accurate a timepiece does he carry in his head, one might almost set a watch by his appearance. This change does not consist merely in her getting off and his taking her place, but he first stands outside the nest on the landingboard and coos and bows three times (just three), and kisses

her. Then she goes down into the yard and takes a bath and dresses her feathers. No eating for Mrs. Pigeon until she is well groomed. Then she is ready to eat, sun herself, and probably exchange views with the other lady pigeons on household topics. She enjoys herself this way until exactly four o'clock, when she flies to the nest, and the bowing and scraping, billing and cooing take place again and the transfer is made. In a pigeon home there is always time for politeness.

There is perhaps no uglier thing in all bird-dom than a newly-hatched squab, but to these fond parents he is beautiful. By the time he is two weeks old, however, he has feathered out and is very pretty.

The father continues to take his turn on the nest until the children are two weeks old, at which time they require no further hovering. He then brings material for a second nest, which the mother builds. The children are left entirely to the father's care, and he is a very busy bird indeed. Instead of sitting six hours a day on the second nest, as he did on the first, he spends twelve hours out of each twenty-four there, and rustles food for the first brood also, for the older children are not yet out of their nest.

When the second family is two weeks old, the mother builds another nest out of the material provided by the father, and hatches a third family. Each family, by the way, consists of two squabs. Unless the oldest squabs have been taken away for market, as is done on commercial farms, when the third litter of eggs is being incubated the father pigeon has young ones to feed in two nests, spends half his time on the third nest, and somehow finds time to teach the first family to fly and feed themselves. When one considers that an average pair of pigeons raises ten families a year, it is apparent that Father Pigeon is not a union man.

Everything seems done in a spirit of love, and a man who has worked with pigeons for twenty years says he has never seen any quarreling between Mr. and Mrs. Pigeon.—Mary Jane McIlwaine, in "British Columbia Farmer."

Hens Follow Sawmill for Profit

Profitable use of cut-over land is one of the problems of any section in which much lumbering is done. F. M. Harrison, of the Sunset Hill Farms, Lake, Miss., with the advice of the county agricultural extension agent, has tried poultry raising as a solution of the problem both for his own and for his neighbors' information. Starting in 1920 with 1 male bird and 5 hens of high-producing strains, he had by the next spring about 50 pullets. The following year his flock numbered 150 pullets and by January, 1923, it had increased to 400 pullets. For the eight months from January to September, 1923, Mr. Harrison realized from his flock a profit of \$400 in addition to the value of the birds, which, by September, numbered 600. The profits were made almost entirely from the sale of eggs, according to reports to the United States Department of Agriculture, the

price received averaging about 35 cents per dozen. Many people have visited the farm, some coming a distance of 75 miles, and reports show that nearly a hundred farmers who have studied the methods used on this farm are starting flocks. Mr. Harrison is increasing his flock and expects to devote additional time to his poultry plant.

SCRATCH FEED

Beware

Said the hen, as she saw the farmer go out of the house, "That's the man I'm laying for."

About a Sandwich

"Say, waiter, why did you bring me a chicken sandwich? I ordered an egg sandwich."

"I am sorry, sir, but I was too late in taking your order."

The Way He Looked

"There's a man outside, sir, that wants to see you about a bill you owe him. He wouldn't give his name."

"What does he look like?"
"Well, he looks like you'd better pay it."—Ex.

His Own Fault

Hubby—"You're three-quarters of an hour late. What do you mean keeping me standing like a fool?"

The wife—"I can't help the way you stand."—Chaparral.

Well Protected

A man noted for his rough joking was putting one over on a neighbor. The day was hot, and when he started home, having come without his hat, he asked, "Do you suppose my brains will bake in this hot sun?"

"Oh, I guess not," replied the neighbor, "you have your shoes on, haven't you?"

The Bargain Seeker

A small girl of 11 entered a London toy shop.

"Have you, please," she asked, "a nice toy for a birthday present for my little sister? About eightpence?"

"Here," said the shopkeeper, "is a doll. It's really a shilling one, but you can have it for eightpence."

"Oh, no, thank you, because if you're knocking fourpence off everything I'd like one of those fourpenny picture books."

BROADENING THEIR VIEW

Side by side in a certain State in the South were a chicken farm and an ostrich farm. The wire fence between them got broken in one place, and one day one of the roosters discovered that he could get through. As he was walking around on the ostrich farm he came across some ostrich eggs. With considerable effort he succeeded in rolling them through the hole in the fence. Then he called all his hens about him and said: "Now ladies, I don't want to find fault with the work that you have been doing, but I just want you to see what your neighbors do."

GENEROUS

Bill: "I thought you were going to give me a chicken for Sunday dinner. Did you forget about it?"

Tom: "No, but that chicken got better."

FAVORITE SPOTS FOR LAYING

On top of the hay stack.

In holes on the side of the stack.

On the roof of the lean-to, just under the eaves of the barn—this spot is shaded and just big enough for a hen. The egg rolls down the roof of the lean-to and onto the ground beautifully, but if you do not see the egg until after it hits the ground you don't appreciate it.

On the ground under the binder.

In amongst the shrubbery.

In the ash box.

On top of the bran bag.

In the horses' mangers.

On top of the automobile in the garage.

Henry Traffords' Laying

Mash Fed With Henerjizer

Will Get the Eggs.

Prices Moderate

Scratch Feed a Specialty

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Prize Winners at the last five
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HOUDANS

Winners at Madison Square Garden, four years in succession, 1921, 1922, 1923 and 1924, also Special for Best Colored Female and also Special for Best Crest. At the Premier Show of the World, New York. Eventually You will get my strain, why not now?

WILLIAM MACKAY, Swift Current, Sask.

S.C. BLACK MINORCAS EGGS FOR HATCHING

From Two Pens—Exhibition Stock
\$3.00 and \$5.00 Per Setting.

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Talking Parrots, Canaries, Singers,
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Safe Delivery

Satisfaction Absolutely Guaranteed
When You Purchase from the

RELIABLE BIRD CO.
292 Carlton Street, Winnipeg

RED



ALLEY

Conducted under the auspices of the Canadian Rhode Island Red Club.

C. Hodgson, secretary-treasurer, 1145 Dovercourt Road, Toronto, Canada.

Mrs. N. J. Gordon, Editor, Transcona, Director for Manitoba

It is very gratifying to note a number of our prominent Red breeders taking a real interest in the Contest question. Last month's Red Alley contained references by the different writers, showing they are quite in agreement with the aim of the club to get more pens at our contests. A number of letters have come to us as well. Mr. Chas. J. Kallal writes: "If we neglect to have our Reds at the laying contests, it is certain the other more represented breeds will, as time goes on, become more popular. Unless the Reds prove that they are capable of producing their share of eggs we cannot expect the breed to go to the fore. For the coming season let us have at least two pens of Reds from each province." That would be splendid, to have two pens from each province, and I believe we can leave it to Mr. Kallal to have Alberta represented. Mrs. Gordon also writes that she is quite in accord and will do what she can, so we may then have two from Manitoba. We haven't

so far been able to see Ontario's quota, though we have written to quite a few breeders. And how about the other provinces? Take this to heart, some of you good people and see what your influence will do.

We have had two letters from men who have become so interested in Reds through reading Red Alley that they are starting in Reds this year. Success to them! May it be ever thus!

This month we shall give you in short form the contest rules for Canadian and Provincial Contests. The Canadian is open. The Provincial is open to entries from within the provinces in which it is held. The entry fee for each pen in the Canadian is \$15, in the Province \$5. Entry forms, rules and regulations will be supplied upon application to the Dominion Poultry Husbandman, Central Experimental Farm, Ottawa. The pens consist of ten birds, with two extras as reserves in the Canadian, of a standard variety, free from standard disqualifications.

These pens are subject to inspection on their home plant. The contest lasts one year. Exceedingly bad shaped eggs, soft shelled eggs or eggs weighing less than 20 ounces to the dozen are not given credit. A report of the trap-nest weekly record of each bird and of all the pens is sent to contestants each week. All birds in the contest not otherwise disqualified whose eggs average 24 ounces to the dozen, after the first four weeks' laying, and that in the contest year lay 200 eggs or over, will be registered in the Canadian National Poultry Record free of charge to the owner. The application from the contests must be in Ottawa before August 15th, and as space is limited it will be well to enter as early as possible. If you have any idea that you may enter a pen, better write to Ottawa immediately and get the rules and regulations in their full form.—

This month I have a few suggestions to make in regard to preparing your birds for the contest. The most important suggestion I made before, but want to emphasize. Let your pullets come to maturity without forcing, giving them no extra beef scrap before sending to Ottawa. I believe they do not place beef scrap before the birds there for two or three weeks after arrival. If I am wrong in this Mr. Taylor will likely correct it in his article which Mr. Hodgson says he expects to write for us. But if such is the case it would be fatal to have fed your birds beef scrap for weeks before sending, only to have it taken away when they arrived. I believe six weeks before sending will be about right to change from growing mash to laying mash. And if your birds are practically seven months old and just getting ready to lay and in fine health and flesh you are giving them a splendid start. And if you can feed a mash and scratch practically the same as the birds will receive later it will be a great advantage. You ought to be able to get this information from the Contest Department. There are no lights used at Ottawa and no runs, so place the pullets you intend to choose from in a closed pen by themselves, two or three weeks before sending, and use no lights. While speaking of forcing the pullets I omitted to say that not only will it start them laying before they have the stamina to stand the strain at Ottawa, but it is also likely to mean a smaller egg, and eggs weighing less than 20 ounces to the dozen are not counted, and they must be 24 oz. after the first four weeks' laying to be registered in the Canadian National Poultry Record. Don't forget that your application form must be in Ottawa by August 15. I have about exhausted all my thoughts on the Laying Contests, and unless some of you provide me with fresh ideas, I'll say au revoir for the summer at least.—Mrs. C. H. Moore.

SINGLE COMB RHODE ISLAND REDS

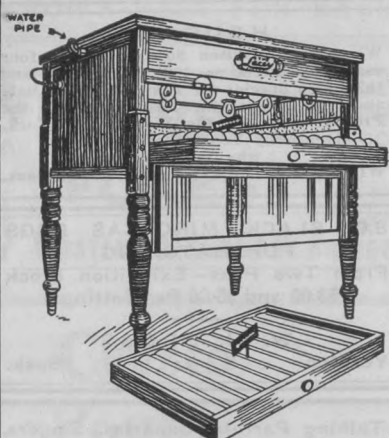
Bred for Egg Production and Exhibition Qualities Combined. Unless a Hen is a High Producer We Never Breed from Her, No Matter How Good She Looks.
Stock For Sale at All Ages. And Prices Within the Reach of All.

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Community Hatching, \$5.00 per 100 eggs, any quantity.

Our own hatched Baby Chicks, standard price, 25c each.

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McKay's Lime Granules
Egg Shell Maker and Grit Combined

SOLD EVERYWHERE

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THE WINNIPEG SUPPLY & FUEL CO., LTD.

Through some unavoidable delay the following came to hand too late for last month's publication, but such valuable matter is worth reading, however late. We are sorry Mrs. Moore says au revoir for the summer, as we would like very much for her to continue her very interesting and instructive items:

CARE OF OUR CHICKS

C. HODGSON, Toronto, Ont.

In April we considered our method of hatching with the care of the chicks up to four weeks of age. We will now discuss the method to be adopted from that time up to ten weeks' old. It may be noted here that when a chick has reached the age of ten weeks its babyhood is well over and up to that age is the most important time in its life. Provided a chicken has been well reared to that age, has had no setback, and is well developed, it is most probable that a good specimen will be grown. Up to the four week period we have fed pin-head oatmeal, chick scratch, sour milk, a reasonable amount of green feed, clean fresh water and chick grit.

Beginning the period from four to six weeks, no radical change will be made in the ration. Any change at any time should be made gradually. Just now, and always as a matter of fact, let us thoroughly examine both our chicks and housing for mites and lice, not forgetting the hen. Even if none are found, it is well to disinfect as a preventative, and in case some are found treat each chick individually and continue such treatment until every trace of vermin is gone. Have the housing absolutely clean at all time and keep continually disinfecting. Keep the birds comfortable. Now that this feature of our work has been given attention, we will consider what gradual change in our feeding plan would be wise. Along with the oatmeal we will add a good commercial chick mash fed

dry in a separate hopper, a mash manufactured by a reliable firm as a developing ration. We will gradually change our scratch feed from baby scratch to something coarser and more bulky, by adding to the scratch as used at present some cracked corn and some cracked wheat with some whole wheat, about equal parts of cracked corn, cracked wheat and whole wheat to an equal amount of the chick scratch fed in a clean litter morning and night and examine the litter to see that all the scratch grain is picked up. The chicks may not be very fond of the corn and may leave it, but if that is the case just miss a feed of scratch and they will soon develop a taste for cracked corn. Along with plenty of exercise this scratch grain ration may be increased, but care should be taken that a good percentage of their daily feed is being taken from the hoppers. No definite rules can be laid down for feeding—we must use judgment. It is important that the chicks should not be over fed, but it is also important that they are well fed. The evening feed should be liberal. A good way is to plan that the amount of hopper feed consumed is equal to the amount of scratch grain fed. Continue sour milk given in a clean dish, which should be thoroughly scalded out every night, as well as the dish or fountain in which water is kept.

Make a point to keep all hoppers, fountain boards, house and runway perfectly clean. In case the chicks are confined to yard space, a good plan is to dig the ground over at least once a week, and when a yard has just been dug rake some oats in to a depth of

about two inches and lay a wire screen over the patch. The oats will sprout in a couple of days, when the screen may be removed and the chicks allowed to scratch the oats out, which provides exercise and green feed. If the oats are let sprout, the chicks get the benefit of the green feed and the food value of the oats. This plan applied to back yard flocks will be found to be a splendid one. With ordinary care, cleanliness, regularity in feeding, good wholesome food of the nature outlined with exercise will bring our chicks through the second period of their babyhood to a consideration where our methods of care may be broadened. We will talk about that period next month—chicks from two to four months of age.

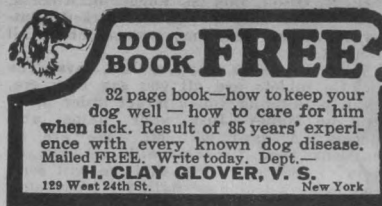
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AT GUELPH

2nd Cock, 4th and 5th Cockerel, 5th Pullet and 2nd Pen.

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Silver Challenge Cup for Best R.I. Red Cock

1st Cock, 4th Hen, 1st, 3rd and 4th Cockerel.

1st, 2nd and 3rd Pullet. 1st Pen.

Nine awards on nine entries.

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1st, 3rd and 4th Cock. 2nd Hen. 1st, 2nd, 5th and 6th Cockerel. 1st, 2nd, 3rd, 4th, 5th and 6th Pullet. 1st, 2nd and 3rd Pen. Best Female. Production Class, 1st Pen. Best Display.

This
Season's
Winnings

AT ST. JAMES AND ASSINIBOIA,

Silver Cup for Best Display in the Show 1st and 2nd Cock, 2nd Hen, 1st, 2nd, 3rd and 4th Cockerel. 1st, 2nd, 3rd and 4th Pullet. 1st and 2nd Pen. Best Red Cockerel Best Red Female. Best Red Display. Best Open Display. Best Utility Pen in the Show.

BRANDON

Cocks, 1st and 3rd. Hen, 3rd. Cockerels, 1st, 2nd, 3rd and 4th. Pullets, 1st, 2nd, 3rd, 4th and 5th. Pens, 1st and 2nd. Special for the Best Pair of R. I. Reds. Best Display, 3 years in succession.

REGINA

Cock, 1st. Cockerels, 1st, 3rd and 6th. Pullets, 1st, 3rd and 5th. Pen, 1st. 1st Pullet also won shape and color special.

Consistent Winners Year after Year. All the above Winners were Bred and Owned by Me. Still Some Stock For Sale.

Hatching Eggs Half-Price—\$2.50, \$5.00 and \$7.50. Order From This Ad.

BOX P. 221

TRANSCONA

MRS. N. J. GORDON

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New Discovery Routs Chicken Lice

Mineralized Water Gets Rid of Dusting or Greasing—Birds Delouse Themselves—
Fine for Baby Chicks and All Poultry

This wonderful product keeps the poultry always lice-free without the poultry raiser doing any work. It is the simplest, easiest, surest and best method ever discovered.



Lice-Go, which is the name of this remarkable lice remedy, is dropped in the chicken's drinking water. Taken into the system of the bird, it comes out through the oil glands of the skin and every louse or mite leaves the body. It is guaranteed to help the hatchability of the eggs and cannot injure the flavor of the eggs or meat; is harmless to chicks and does not affect the plumage. A few days treatment at the start and then a little added to the drinking water each month is all that is necessary.

H. T. Thorne, Fleming, Sask., says: I have tried Lice-Go and do not want to be without it.

G. W. Marshall, Stewiacke, N.S., says: Last summer I used Lice-Go for my hens and chickens, and I find it a good article.

H. N. Olson, Box 28, Edgerton, Alberta, says: Your Lice-Go tablets worked wonderful on our chickens, my neighbors all want it, too.

M. A. Urquhart, Zephyr, Ont., says: The Lice-Go tablets are all you say they are. I will be sending you a larger order later. Send no Money—Just your name and address. A card will do. We are so confident that Lice-Go will get rid of every louse, or mite that we will send you one large double strength \$1.00 package, enough for 100 gallons of water. When it arrives pay postman only \$1.00 and few cents postage. If you are not absolutely satisfied after 30 days' trial, your money will be refunded without question or argument. (3 \$1 pkgs., \$2.00. Sent two; have your own free.) Cash orders postpaid.

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Dark Brown Leghorns

Two Breeding Pens now for Sale.

1 Cockerel and 6 Hens, nearly all
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1 Cockerel and 3 Hens, heavy laying
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DRINK

DREWRY'S
Beer, Ale and Stout
Here Since 1877 and

Still the Best

J-7221

Fifth Canadian Egg Laying Contests

(OTTAWA)

Conducted by the Dominion Experimental Farm, Ottawa, Ont.

The contest started Nov. 1 and continues for 52 weeks. Each pen in the contest contains ten birds and the birds in each pen are numbered from 1 to 10.

The following table gives the production for the individual birds for the week, under column numbering 1 to 10. Column "W" gives the total weekly pen production and column "T" the total number of eggs for the pen to date.

B.P.R.—Barred Plymouth Rocks. R.C.R.I.R.—Rose Comb Rhode Island Reds. W.W.—White Wyandottes. W.P.R.—White Plymouth Rocks. S.C. Anc.—Single Comb Anconas. W.L.—White Leghorns. S.C.R.I.R.—Single Comb Rhode Island Reds.
x—Leading Pens. b—Broody. —Moulting.

Report of Week No. 29, Ending May 21, 1924

Pen.	Owner and Address.	Breed	1	2	3	4	5	6	7	8	9	10	W.	Total
1.	J. R. Stork, St. Catharines, Ont.	B.R.	5	3	7	0	2	5	0	1	4	0	27	726
2.	Rev. H.A.E. Clarke, Bells Corners, O.	B.R.	6	4	0	5	3	7	5	2	5	4	41	861
3.	E. Hall, Trafalgar, Ont.	B.R.	6	0	5	6	2	4	6	5	1	7	42	981
4.	A. Dalgarno, Hanover, Ont.	B.R.	0	5	1	4	2	0	4	7	6	1	30	585
5.	C. A. Webster, Cainsville, Ont.	B.R.	0	5	7	7	7	6	6	4	0	48	895	
6.	R. A. Snowball, Chatham, N.B.	B.R.	7	7	6	5	2	6	7	7	7	6	x60	1124
7.	J. C. Quanbury, Port Dover, Ont.	B.R.	6	5	2	3	4	0	0	7	5	1	33	869
8.	W. E. B. Tait, Dorchester, N.B.	B.R.	5	6	6	7	5	7	5	1	0	7	49	862
9.	W. J. Johnston, Meaford, Ont.	B.R.	3	4	7	3	5	2	7	6	4	3	44	1001
10.	French Bros., Newmarket, Ont.	B.R.	6	3	7	6	5	5	4	4	2	0	42	753
11.	Wm. Downham, Highland Creek, O.	B.R.	6	5	5	7	0	5	7	6	6	7	54	988
12.	J. C. Clark, Gainsville, Ont.	B.R.	b	5	2	7	0	6	6	5	0	5	31	801
13.	H. G. L. Strange, Fenn, Alta.	B.R.	6	5	b	5	3	5	4	6	6	7	47	767
14.	Ferguson Farms, Dyersburg, Tenn.	B.R.	1	7	0	6	7	5	0	6	5	6	43	883
15.	E. C. Foreman, E. Lansing, Mich.	B.R.	6	4	7	7	2	7	5	5	5	5	53	820
16.	Culp's P. Farm, Berkeley, Ont.	B.R.	6	2	5	4	6	6	6	5	3	5	48	1051
17.	Hope P. Farm, Billings Bridge, O.	B.R.	5	5	3	5	6	6	6	6	7	4	53	940
18.	W. E. L. Coleman, Ottawa, Ont.	B.R.	6	6	7	4	1	3	4	3	3	2	39	683
19.	J. R. Baker, Batteau, Ont.	B.R.	4	7	3	4	6	1	7	5	3	6	46	392
20.	C. M. Goddard, Britannia H., Ont.	B.R.	5	3	0	5	2	5	6	5	6	43	908	
21.	W. R. Retson, Truro, N.S.	S.C.R.I.R.	3	3	0	0	6	6	5	4	6	4	53	1089
22.	Evergreen Farm, Greenville, Mich.	W.W.	5	2	4	5	5	4	2	6	4	5	42	1048
23.	W. H. Fisher, Ayton, Ont.	W.W.	0	4	5	5	2	6	5	4	6	0	37	841
24.	J. C. Mercer, Markdale, Ont.	W.W.	0	1	0	5	6	0	6	3	1	5	27	675
25.	Lewis Miller, Hamilton, Ont.	W.W.	4	5	5	5	4	2	4	2	5	6	42	852
26.	H. Simpson, Leamington, Ont.	W.R.	6	1	5	1	6	1	5	4	5	3	37	666
27.	N. H. Gamp, New Hamburg, O.	SC Anc.	6	5	2	4	6	5	5	5	1	3	42	745
28.	H. G. Hebel, Bridgeport, Ont.	W.L.	6	0	6	5	0	0	5	5	0	6	33	815
29.	Chas. Williamson, Woodroffe, O.	W.L.	5	5	6	5	6	6	6	6	6	6	57	740
30.	Heber S. Rogers, Peterboro, O.	W.L.	5	6	5	5	0	0	6	4	1	5	37	1077
31.	Philip Henrich, Waterloo, Ont.	W.L.	5	5	3	6	5	5	5	6	4	6	50	988
32.	Ottawa East P. Yards, Ottawa, O.	W.L.	6	7	4	7	6	6	5	5	5	7	58	864
33.	Stork & Ruddle, St. Catharines, O.	W.L.	6	5	6	6	5	2	5	6	6	6	53	996
34.	G. S. Dundas, Markdale, Ont.	W.L.	4	0	1	1	0	6	5	1	6	4	28	1007
35.	Meadowedge Farm, Cedarhurst, N.Y.	W.L.	0	5	4	1	6	5	0	4	6	6	37	1129
36.	Dr. I. H. Ante, Richmond Hill, O.	W.L.	4	1	6	0	6	4	6	5	3	4	41	899
37.	Lewis N. Clark, Port Hope, Ont.	W.L.	6	6	5	3	5	6	5	5	4	5	51	1095
38.	G. A. Wood, Peterboro, Ont.	W.L.	0	6	5	6	5	0	6	2	4	6	40	798
39.	H. Bolivar, Cloverdale, B.C.	W.L.	5	6	6	0	4	6	6	5	5	6	50	1028
40.	Walter Rose, Brussels, Ont.	W.L.	6	5	2	6	6	6	5	5	5	7	53	1233
41.	Russell Sulley, Courtice, Ont.	W.L.	6	4	4	5	6	2	4	7	6	3	47	856
42.	Geo. B. Ferris, Grand Rapids, Mich.	W.L.	6	6	6	6	5	7	5	0	4	0	45	935
43.	R. J. Penhall, Port Dover, Ont.	W.L.	5	5	6	2	0	6	4	6	6	0	40	972
44.	Hollywood P. Farm, H'wood, Wash.	W.L.	6	2	6	6	6	6	5	3	6	5	51	1300x
45.	Manor Farms, Clarkson, Ont.	W.L.	6	6	3	6	6	6	5	6	7	6	57	829
46.	C. W. Sulley, Cobourg, Ont.	W.L.	1	5	6	5	7	5	3	3	5	0	40	885
47.	Cloverlea Stock F'm, Edmonton, Alta.	W.L.	6	6	7	5	6	5	6	7	3	0	51	1000
48.	W. J. Richardson, Caledonia, O.	W.L.	6	3	5	2	6	0	4	6	6	0	38	771
49.	Cooksville P. F'm, Cooksville, Ont.	W.L.	5	5	6	0	5	4	5	4	4	5	43	937
50.	H. G. Rogers, Cooksville, Ont.	W.L.	4	2	0	6	2	5	5	1	0	4	29	786
51.	Winchester P. F'm, Deep Brook, N.S.	W.L.	5	5	4	6	6	1	5	6	4	5	47	974
52.	J. C. Quanbury, Port Dover, Ont.	W.L.	5	6	4	5	6	5	5	4	6	6	52	1116
53.	Alex. McLean, Gananogue, Ont.	W.L.	5	6	6	6	5	6	5	5	7	5	56	1234
54.	Geo. Craig, Deschenes, Que.	W.L.	5	4	0	7	5	4	5	6	6	7	49	1073
55.	W. H. Fisher, Ayton, Ont.	W.L.	6	6	2	..	0	5	6	6	4	0	41	1154
56.	J. C. Mercer, Markdale, Ont.	W.L.	3	5	4	6	6	4	3	6	6	4	47	910
57.	C. W. Coit, Bowmanville, Ont.	W.L.	2	5	3	6	3	0	4	5	6	0	34	1043
58.	W. J. O'Neill, Bassano, Alta.	W.L.	6	6	1	5	6	5	4	3	0	6	42	1054
59.	Credit Vale Farm, Streetsville, Ont.	W.L.	6	6	4	4	7	6	6	7	4	5	55	1014
60.	H. E. Smith, Port Arthur, Ont.	W.L.	6	6	5	5	4	6	6	6	5	5	54	978
61.	T. W. Morse, Port Credit, Ont.	W.L.	5	5	4	..	5	3	5	2	2	3	33	759
62.	B.C. Agri. Col., Vancouver, B.C.	W.L.	5	1	6	7	6	4	6	5	5	6	51	1021
63.	Ont. Agric. College, Guelph, Ont.	W.L.	0	0	0	3	0	5	0	5	2	0	15	534
64.	Man. Agri. Col., Winnipeg, Man.	W.L.	0	7	1	4	5	0	5	5	6	6	39	740
65.	Kempville, Agri. Sch., Kempville, Ont.	W.L.	7	6	6	6	6	6	5	7	5	6	x60	1137
66.	MacDonald Col., MacDonald, Que.	SCRIR.	4	0	6	5	6	4	1	3	0	4	33	1053
67.	MacDonald Col., MacDonald, Que.	B.R.	0	0	6	2	1	3	4	7	4	0	27	956
68.	Ont. Agri. College, Guelph, Ont.	B.R.	5	3	5	6	5	5	0	2	2	5	38	816
69.	Man. Agri. Col., Winnipeg, Man.	B.R.	1	b	7	4	0	7	4	6	6	3	38	770
70.	Kempville Agri. Sch., Kempville, O.	B.R.	5	1	6	0	5	7	3	1	3	4	35	968
71.	Experimental Farm, Lethbridge, Al.	B.R.	7	3	5	0	0	3	4	6	4	5	37	983
72.	Experimental Farm, Ottawa, Ont.	B.R.	6	0	0	6	4	0	7	0	5	0	28	619
73.	Experimental Farm, Ottawa, Ont.	B.R.	7	6	5	7	5	0	5	5	1	6	47	981
74.	Experimental Farm, Ottawa, Ont.	B.R.	7	3	4	0	6	4	3	7	6	0	40	663
75.	Experimental Farm, Ottawa, Ont.	B.R.	7	2	4	5	6	4	0	5	1	5	39	935
76.	Experimental Farm, Ottawa, Ont.	B.R.	0	5	0	3	6	6	5	6	0	6	37	961
77.	Experimental Farm, Ottawa, Ont.	W.L.	2	6	0	0	0	1	2	4	2	0	21	790
78.	Experimental Farm, Ottawa, Ont.	W.L.	0	0	0	0	5	3	7	6	0	5	26	630
79.	Experimental Farm, Ottawa, Ont.	W.L.	0	4	4	0	5	6	5	5	0	0	29	822
80.	Experimental Farm, Ottawa, Ont.	W.L.	0	4	0	1	4	6	6	0	0	4	24	574
81.	Experimental Farm, Ottawa, Ont.	W.L.	5	0	0	4	5	4	5	5	0	6	34	662
82.	Experimental Farm, Ottawa, Ont.	W.L.	6	1	0	0	0	6	6	0	5	7	31	704
83.	Experimental Farm, Ottawa, Ont.	W.L.	6	2	6	0	0	0	6	6	5	0	31	533

Totals 3438 73912

Egg Laying Contests—Continued

(PRAIRIE PROVINCES)

ALBERTA EGG LAYING CONTEST, LETHBRIDGE, ALTA.

Report of Week No. 29, Ending May 21, 1924

Pen.	Owner and Address.	Breed	1	2	3	4	5	6	7	8	9	10	W.	Total
1.	G. H. Menzies, Provost.....	W.L.	5	1	3	2	5	3	0	0	5	5	29	664
2.	W. B. McLaine, Lethbridge.....	W.L.	6	5	5	5	5	5	6	5	0	5	47	904
3.	Pioneer Poultry Farm, Medicine Hat.....	W.L.	7	5	6	7	7	6	6	5	6	6	61	1101
4.	Winter Egg Poultry Farm, Leth.....	W.L.	7	7	6	6	3	6	4	6	5	7	57	x1356
5.	E. R. Nicholls, Big Valley.....	W.L.	7	6	6	7	6	6	7	6	5	6	x62	851
6.	Cloverlea Stock Farm, Edmtn.....	W.L.	6	5	7	6	5	5	7	0	6	6	53	1115
7.	Mrs. J. W. Cookson, Tofield.....	W.L.	7	5	7	5	6	4	5	6	4	5	54	1116
8.	Round T. Ranch, High River.....	R.C.W.L.	3	4	6	6	0	0	5	4	6	7	41	1068
10.	R. A. Meeks, Manville.....	S.C.B.L.	5	4	3	0	5	0	6	6	0	3	32	568
12.	W. A. Fraser, Medicine Hat.....	B.R.	6	7	6	6	5	5	5	6	4	5	55	1178
13.	B. Redding, Retlaw.....	B.R.	5	5	4	5	5	3	5	6	3	2	43	645
14.	H. G. L. Strange, Fenn.....	B.R.	6	4	6	6	5	4	4	5	4	4	48	886
15.	D. G. McCrae, Lethbridge.....	B.R.	0	4	6	1	3	4	2	3	4	2	29	772
16.	E. J. Forner, Medicine Hat.....	B.R.	5	0	3	1	4	0	1	3	3	0	20	501
17.	H. Higginbotham, Calgary.....	B.R.	6	3	7	5	6	3	6	5	3	5	49	825
18.	V. A. Coleman, Lethbridge.....	B.R.	5	6	5	7	6	6	7	6	4	7	59	856
19.	F. Edwards, Edmonton.....	B.R.	6	6	7	b3	6	6	6	5	2	5	52	1162
20.	M. Bolinger, Gleichen.....	B.R.	2	5	6	5	5	6	3	1	3	6	42	863
21.	Cloverlea Stock Farm, Edmtn.....	B.R.	6	5	4	0	6	0	6	5	5	2	39	997
22.	T. G. Kinvig, Medicine Hat.....	P.R.	0	6	0	4	2	5	4	5	6	b	32	668
23.	E. Farquharson, Provost.....	W.W.	6	5	6	6	5	6	5	7	6	7	59	779
24.	Dept. of Agri., Edmonton.....	W.W.	2	5	6	4	0	5	6	5	5	3	41	996
25.	A. W. Fiske, Provost.....	W.W.	4b	1	4	5	0	5	0	6	5	0	30	633
26.	Gould Bros., Vegreville.....	W.W.	6	0	5	0	5	0	5	1	6	3	33	775
27.	P. C. Litster, Vegreville.....	W.W.	7	5	4	7	4	5	6	6	4	4	52	1046
28.	Experimental Farm, Lethbridge.....	B.R.	6	4	6	3	5	6	6	6	6	5	54	1314
29.	Experimental Farm, Lethbridge.....	B.R.	6	6	7	b1	6	6	4	6	7	6	55	1438
Totals													1228	25077

MANITOBA EGG LAYING CONTEST, BRANDON, MAN.

Report of Week No. 29, Ending May 21, 1924

Pen.	Owner and Address.	Breed	1	2	3	4	5	6	7	8	9	10	W.	Total
1.	Wm. Gregg, Desford.....	S.C.A.	4	1	4	5	5	5	4	0	4	0	32	564
2.	Geo. A. Frame, Winnipeg.....	S.C.A.	4	3	6	5	5	5	5	4	6	6	49	1127
3.	Jos. McQuoid, Winnipeg.....	W.L.	4	6	5	6	4	6	4	4	6	6	51	953
4.	W. R. Barker, Deloraine.....	B.R.	4	5	7	4	6	5	4	7	5	0	47	1208
45.	H. Beaumont, Cordova.....	B.R.	5	5	1	6	6	5	7	6	6	52	711	
6.	W. J. Currie, Brandon.....	B.R.	6	2	3	6	4	6	2	5	6	5	45	949
7.	W. C. Brethour, Miami.....	B.R.	5	5	6	7	5	6	3	6	4	1	49	961
8.	Mrs. A. Cooper, Treesbank.....	B.R.	7	b	2	b	6	6	6	5	0	5	37	817
9.	Mrs. R. J. McNabb, Minnedosa.....	B.R.	5	5	6	5	6	3	5	5	6	5	51	1215x
10.	Mrs. N. McNaughton, Morden.....	B.R.	6	3	6	3	5	1	7	5	5	5	47	1104
11.	R. F. Russell, Morris.....	B.R.	6	5	7	6	1	5	7	6	6	6	55	798
12.	C. W. Willis, Elmwood.....	B.R.	6	5	6	2	6	0	6	6	6	49	1173	
13.	W. J. Witter, Cordova.....	B.R.	6	7	7	7	6	7	5	5	6	4	x60	877
14.	John Strachan, Pope.....	B.R.	1	0	7	6	6	0	5	4	0	5	34	805
15.	John Strachan, Pope.....	B.R.	6	4	6	5	4	b	1	6	0	6	40	589
16.	W. J. Robinson, St. James.....	W.W.	5	3	6	5	b	4	5	4	5	4	42	530
17.	Mrs. A. S. Hart, Gladstone.....	W.W.	5	6	3	3	4	6	1	3	5	2	41	937
18.	C. W. Wallis, Elmwood.....	W.O.	6	6	6	2	4	5	5	5	5	2	47	1138
19.	Parrot's Poultry Farm, Neepawa.....	B.O.	6	5	4	5	4	6	5	6	7	b	51	521
20.	Dom. Ex. Station, Morden.....	R.L.R.	b	6	7	6	6	3	6	4	6	7	52	967
21.	Man. Agricultural College, Wpg.....	W.L.	6	0	7	6	6	2	5	4	5	d	35	724
22.	Dom. Ex. Farm, Brandon.....	W.W.	0	4	0	4	5	4	5	4	3	3	32	912
23.	Dom. Ex. Station, Morden.....	B.R.	6	7	7	6	5	5	6	6	3	57	900	
24.	Man. Agricultural College, Wpg.....	B.R.	0	0	5	1	4	5	7	3	5	4	32	825
25.	Dom. Ex. Farm, Brandon.....	B.R.	6	4	4	6	5	5	6	6	0	6	49	1278
26.	Dom. Ex. Farm, Brandon.....	B.R.	6	4	5	7	5	6	5	5	4	5	54	1049
Totals													1190	23730

SASKATCHEWAN EGG LAYING CONTEST, INDIAN HEAD, SASK.

Report of Week No. 29, Ending May 21, 1924

Pen.	Owner and Address.	Breed	1	2	3	4	5	6	7	8	9	10	W.	Total
1.	Henry Barton, Davidson, Sask.....	B.R.	4	3	2	3	6	5	6	b	5	5	39	457
2.	A. M. Dykes, N. Lethbridge, Alta.....	B.R.	3	5	b	0	5	2	3	5	4	4	27	1086
3.	S. H. Jones, Blaine Lake, Sask.....	B.R.	5	3	7	0	6	2	0	5	1	4	33	487
4.	D. J. McIntosh, Swift Current, Sask.....	B.R.	0	0	4	6	s	d	6	0	6	3	26	519
5.	W. J. White, Saskatoon, Sask.....	B.R.	7	1	5	5	d	6	0	6	7	0	37	803
6.	E. Barnett, Radisson, Sask.....	W.W.	4	4	0	5	0	4	5	0	4	4	30	409
7.	F. Finch, Lanigan, Sask.....	W.W.	0	5	0	2	0	b	5	5	1	2	21	455
8.	G. W. Fraser, Grayburn, Sask.....	W.W.	5	0	4	1	4	0	b	3	1	0	18	263
10.	Miller Bros., Bladworth, Sask.....	W.W.	b	2	4	d	2	5	b	1	0	5	21	643
11.	Mrs. Wm. Hanson, Tessier, Sask.....	R.I.R.	0	4	0	0	5	0	5	6	0	d	21	581
12.	Frank Holmes, Saskatoon, Sask.....	R.I.R.	0	6	4	s	1	5	0	3	4	0	23	384
13.	W. A. Aitken, Drinkwater, Sask.....	W.R.	0	3	0	0	5	4	0	0	6	6	24	320
14.	D. M. More, Colgate, Sask.....	W.R.	6	5	5	0	0	6	0	0	5	0	27	341
15.	W. A. Aitken, Drinkwater, Sask.....	S.C.A.	5	1	5	3	4	4	0	5	0	3	31	545
16.	J. Powell, Saskatoon, Sask.....	W.L.	3	5	s	3	5	1	d	0	5	0	22	271
17.	Thos. J. Linton, Indian Head, Sask.....	B.L.	0	0	1	3	6	3	4	0	2	2	21	283
18.	R. J. Thompson, Alameda, Sask.....	B.L.	0	5	5	d	4	5	5	6	5	6	46	512
19.	P. A. Fisher, Regina, Sask.....	W.W.	5	5	5	5	4	4	s	5	5	3	42	1084
20.	Exp. Farm, Indian Head, Sk.....	W.W.	5	5	4	4	0	4	0	0	2	3	28	487
21.	Exp. Farm, Indian Head, Sk.....	W.W.	2	0	4	4	1	0	0	0	0	0	11	296
22.	Exp. Farm, Indian Head, Sk.....	W.W.	0	2	0	0	0	0	1	0	0	0	3	361
23.	Exp. Farm, Indian Head, Sk.....	W.W.	0	0	0	3	4	5	5	0	4	26	504	
24.	Exp. Farm, Indian Head, Sk.....	W.W.	0	4	3	0	6	0	3	5	4	0	25	532
Totals													602	11623

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One year I hatched 42 Pekin ducklings and raised all but one. That one was caught by a fox when half grown. I usually hatch from 25 to 50 each season and but few of them fail to grow up. There is danger of in-breeding among ducks, and, I think, that is one reason why people fail to raise the youngsters after they are hatched. The old stock must be healthy and not related too closely.

Pond Not Needed

Water, except for drinking, is not needed by flocks, although the flock that can have a brook or pond to paddle in will keep the plumage much cleaner and in better condition. I have never allowed young ducks to go to the water until well feathered out, as there are too many rangers lurking in dark pools for the little birds. Turtles, snakes and even frogs will kill the ducklings, therefore keep them away from the water until they are at least half grown. Provide plenty of drinking water and have the fountains deep enough so the whole head can be immersed. This is important, in order to keep the bird's nostrils from becoming clogged. Ducks require water to help them swallow their food. Grain should be fed in the shape of mash. The birds shovel up a mouthful of food and waddle over to the water dish and wet it. Where the birds can have a good range in a wet low place, they will get a large part of their living. It is well to give them one feed a day at home, the one at night, in order to teach them to come home. Ducks are safer shut in a pen at night than they are roaming about in the open.

Hens for Hatching

Eggs may be hatched in an incubator but I have usually used hens for the purpose. Nine or 11 eggs are

placed under each hen. Nests are made on the ground and covered with a tight coop to keep marauders away. As the shells are thick, they require more moisture than do hens' eggs, hence it is necessary to sprinkle them a couple of times during the four weeks required for them to hatch. As the time for hatching approaches, they should be immersed in warm water. Sometimes the ducklings have difficulty in getting out of the shells. Moisture will usually help. This is the only difficulty I have ever had in hatching. The eggs run almost 100 per cent fertile, but sometimes a bird fails to get out of the shell. I think it is due to drying out, so it is well to watch the air space in the eggs and try to supply moisture when it is lacking. If the eggs are hatched in an incubator, it is necessary to watch the air spare carefully. Ducks are poor mothers, so I have had better luck by hatching with hens. The mother duck leads her brood too far astray if not restrained.

Dry, Clean Coop

Ducklings should have a dry coop and it should be kept clean. This is something of a task. Feed them a moist mash made of middlings or bran and clean fine sand, the sand making one-third of the whole. Provide drinking fountains that the birds can immerse the head in but cannot get into bodily. Let them have a chance to run in the grass immediately, but keep them shut up in the coop when the grass is wet. When the down has been replaced by feathers, they may be allowed to roam at will. The old ducks will then adopt the youngsters and they will all feed together.

I now keep the Indian Runner duck. This bird is a good layer and merits the title often bestowed upon it, "the Leghorn of the duck tribe." Records I have kept show that the flock average for laying runs over 200 eggs per bird, and I have had individual birds that laid considerably more than that number. One duck laid before she was four months old and I kept her nine years and bred up a whole flock from her. Young ducks hatched in May will start laying before the first of October and lay steadily for ten or twelve weeks. Then they will take a vacation of four or six weeks and start again, continuing until July,

There will be a few eggs at all times of the year from a good strain of Indian Runners. A flock of 14 ducks never failed to give me one or more eggs every day for an entire year. A good many of the days, the whole flock laid and several times I have known a bird to lay two eggs in a day. This is accounted for by the fact that one egg was laid early in the morning and the other at night. Ducks laying heavily should be fed a ration containing animal protein, just as hens are fed. They lay early in the morning, usually, hence it is advisable to keep them shut in their pens until 9 o'clock; otherwise, many of the eggs may be dropped about the range.

Pekins Are Larger

Pekins will lay 100 or more eggs during the season, sometimes nearly 150. They seldom lay much in the fall, but keep at it pretty steadily during the spring. These birds are larger than the Runners and are the kind usually grown for meat. Rouens are handsome birds but are of a dark color and therefore not as desirable for meat birds. They will not lay so many eggs as the Pekins. The Buff Orpington duck is noted as a layer. It is a favorite on many farms but I have never had any experience with it. Mallards will seldom lay more than 30 or 40 eggs during the season, although sometimes a bird will double that number. This breed is kept more for pleasure than for actual value. They are used as decoys by hunters.

One can distinguish between the sexes by the call of the birds. The drakes have a husky voice, while the ducks are able to voice the loud "quack, quack." For breeding purposes, one male to each five or six females is about the right proportion.

Duck eggs may be sold in the larger markets and also at hotels and bakeries. I have usually received about a third more a dozen for duck eggs than for hen eggs; also, during the spring, there is always a chance to sell a large number for hatching purposes. There is a prejudice abroad against the duck egg, but eggs from the Runners cannot be distinguished from hens' eggs by the taste. Some of the other breeds may have a stronger taste.—Charles H. Chesley, in "Farm and Ranch," Dallas, Texas.

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